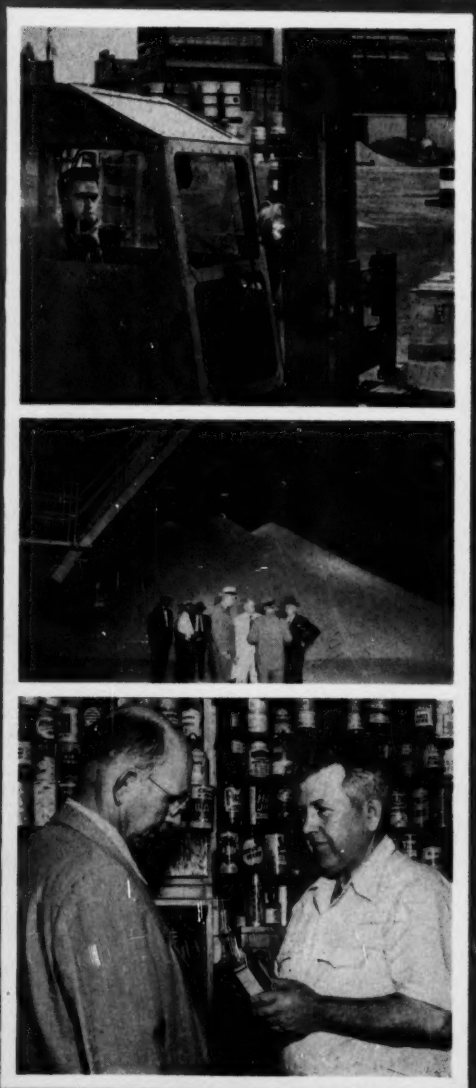
Chemical Week

June 6, 1953 Price 35 cents



"Prowl car" radio setup puts dollar-saving hustle into plant materials traffic . . . . . p. 34

Need researchers? Heed this study of their habits and habitats, likes and dislikes . . . . . p. 42

Ship to shore to user: slick, mechanized nitrate handling cuts labor costs . . . . . p. 52

Recipe for a lusty new market: a pinch of tripolyphosphate to a barrel of cement . . . . . p. 58

USDA's Fulton: If it's anything about insecticide aerosols, he knows the score . . . . . p. 65

A McGRAW-HILL PUBLICATION

MATHIESON T-3 SOLVENT

typical composition:

Trichlorobenzenes 88%
Tetrachlorobenzenes 6%
Lower boiling compounds 6%

T-3 Solvent is an excellent solvent for oils, fats, waxes, certain resins, and oil soluble dyes. It is completely miscible with—

- **Benzene**
- **Toluene**
- **Petroleum ether**
- **Diethyl ether**
- **Carbon tetrachloride**
- **Chloroform**
- **Nitrobenzene**
- **Furfural**
- **Perchloroethylene**
- **Ethyl acetate**
- **Amyl acetate**
- **Dimethyl phthalate**
- **Acetone**
- **Ethylene dichloride**
- **Methyl ethyl ketone**

Boiling Range:
200-230° C. (95%)

Flash Point:
193° F. (Cleveland open cup)

Fire Point:
None

Freezing Point:
Minus 2.3° C.

Pounds per Gallon:
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Viscosity:
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Solubility:
T-3 in water—0.005 gm/100gm
Water in T-3—0.01

Mathieson T-3 Solvent is available in commercial quantities from Niagara Falls, N. Y. Shipped in 55-gallon non-returnable steel drums and in tank cars.

MATHIESON CHEMICAL CORPORATION
Mathieson Alkali Works Sales Division
Baltimore 3, Maryland

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Chemical Week

Volume 72 • June 6, 1953 • Number 23

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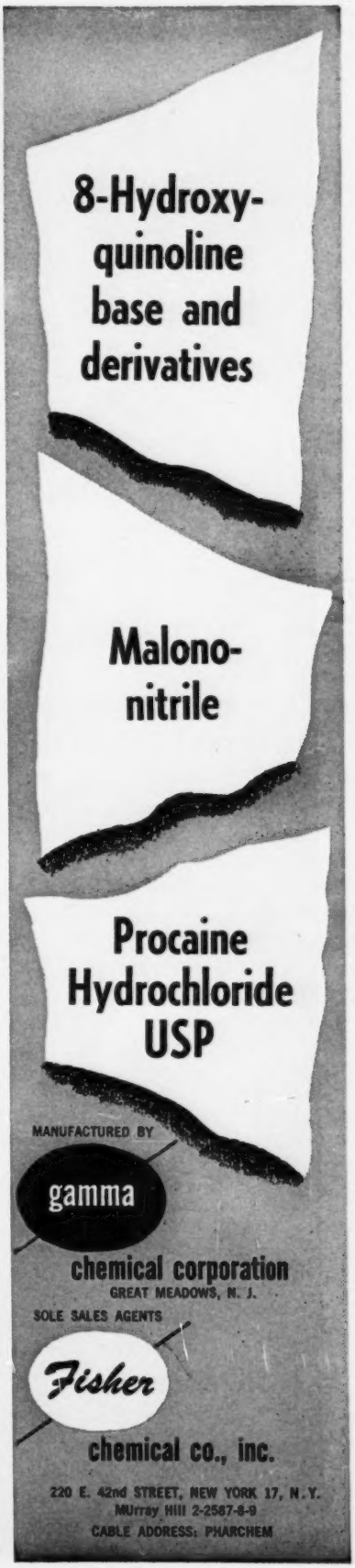
Chemical Week (including Chemical Specialties and Chemical Industries) is published weekly by McGraw-Hill Publishing Company, Inc. James H. McGraw (1860-1948), founder. **Publication Office:** 1309 Noble St., Philadelphia 23, Pa.

Executive, Editorial and Advertising Offices: McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y. Curtis W. McGraw, President; Willard Chevalier, Executive Vice-President; Joseph A. Gerardi, Vice-President and Treasurer; John J. Cooke, Secretary; Paul Montgomery, Senior Vice-President, Publications Division; Ralph B. Smith, Vice-President and Editorial Director; Nelson Bond, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Director of Circulation.

Subscriptions to Chemical Week are solicited in the chemical and process industries from management men in administration, research, production and distribution. Position and company connection must be indicated on subscription order. Address all subscription communications to Chemical Week Subscription Service, 1309 Noble St., Philadelphia 23, Pa., or 330 W. 42nd St., New York 36, N. Y. Allow one month for change of address.

Single copies 35¢. Subscription rates—United States and Possessions $5.00 a year; $8.00 for two years; $10.00 for three years. Canada $6.00 for a year; $10.00 for two years; $12.00 for three years. Other Western Hemisphere Countries $15.00 a year; $25.00 for two years; $30.00 for three years. All other countries $25.00 a year; $40.00 for two years; $50.00 for three years. Entered as second class matter December 20, 1951, at the Post Office at Philadelphia 23, Pa., under the act of March 3, 1879. Printed in U.S.A.

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Integrated, interlocking Westinghouse equipment, used with all types of arc furnaces, increased elemental phosphorus production in this furnace.

Westinghouse power package boosts arc furnace production

An integrated power package, applied to your arc furnace installation by Westinghouse engineers, can make production jump. One chemical company increased power efficiency 10% and boosted furnace capacity by using the Westinghouse equipment described below. In fact, a convincing number of chemical manufacturers could show you profit-making proof, because more furnaces today have Westinghouse equipment than all other makes combined.

Shell-form design strengthens transformers—To meet the trend toward higher voltages, Westinghouse offers its outstanding shell-form transformer... far stronger than the conventional core-form construction and more compact. It can stand the overloading and high stresses encountered in handling heavy current surges. Built for all ratings over 1500 kva, Westinghouse shell-form transformers have a fine record for low maintenance and service continuity.

Electrical brain moves electrodes—Another Westinghouse development—Rototrol®—maintains the desired power input. As furnace conditions change, Rototrol automatically and smoothly moves the electrodes up or down within the charge. It balances arc voltage and current to hold steady the input set by the operator. Rototrol acts fast and doesn't overshoot.

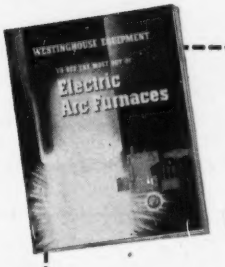
Maintenance men like this breaker—Westinghouse has designed two new hard-working air-blast circuit breakers that provide 500,000 kva interrupting capacity. They can withstand 15,000 operations without major maintenance—seven or eight times more than conventional oil-insulated breakers. Inspection and oil reconditioning every two or three weeks are no longer necessary.

Free booklet of arc furnace ideas—An informative, 20-page booklet, *Westinghouse Equipment for Arc Furnaces,* can spark ideas for your operation. Here's convincing evidence . . . facts, installation photos, technical data... to show that it's wise, when your next project comes up, to call your nearby Westinghouse representative. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa.

J-94988

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Did you ever listen in on a debate between a dyed-in-the-wool flyrod enthusiast and a bait caster? Well, it's interesting. A good argument on both sides.

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These tough, strong, dependable paper shipping sacks are doing a fine job for packers and shippers of more than 200 different chemicals.

They are CUSTOM BUILT in various types, sizes, and strengths. Available printed in fade-proof inks or plain. They are sift-proof, dust-proof, and water-resistant.

A Raymond representative will be glad to assist in selecting the perfect Shipping Sack for your individual requirements.

THE RAYMOND BAG COMPANY
Middletown, Ohio



OPINION . . .

Pink Cocktails

TO THE EDITOR: Your note (*Apr. 11*) "for the first time in its 86-year history, Parke, Davis & Co. opened the doors—via television—of its research laboratories to the public" does not agree with the facts . . .

In 1912, on the occasion of the International Congress of Applied Chemistry, my wife and I, together with . . . foreign chemists . . . were shown over part of the factory and . . . research laboratories.

We saw multicolored pills . . . experiments on dogs, frogs, etc. . . . we were served a surprising luncheon with cocktails in the colors of the pills and with frog legs, etc. . . . but no dog meat!

H. H. LEBACH
Haveg Corp.
Newark, Del.

But with no television, multicolored or black-and-white, we wager.—ED.

Kaiser in Ohio

TO THE EDITOR: Your May 2 issue has been brought to my attention with especial reference to an item in the Newsletter relating to the Kaiser Aluminum & Chemical Corp. and the Ohio River Pollution Control Board . . . My purpose in writing is . . . to provide you with . . . information on the Kaiser situation . . . in which your readers might be interested . . .

It is true that the Water Pollution Control Board has not granted a waste discharge permit for a proposed Kaiser plant in Ashtabula Township of Ashtabula County, O. But neither has the Board officially stated that it would not issue such a permit.

Mr. Fred Lohse, assistant to the vice-president in charge of research and development of the Kaiser Aluminum & Chemical Corp., told the Board at its Apr. 21 meeting that Kaiser does not actually need an answer for a year and a half, since the company's exploratory work is still in a very preliminary stage.

The Board suggested that sanitary engineers, geologists and water resources experts of the Ohio Dept. of Health and the Ohio Dept. of Natural

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to: W. A. Jordan, Chemical Week, 330 W. 42nd St., New York 36, N.Y.

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910 South Michigan Avenue Chicago 80, Illinois

OPINION . . . . . .

Resources cooperate with Kaiser in seeking a solution to the waste disposal problem.

The Kaiser Corp. has not offered a specific program for handling the wastes, other than to state that it would like to discharge approximately 2 million gallons of brine daily into Lake Erie along the shore line where the proposed plant might be located.

The Board was advised that this quantity of wastes would present serious brine load factors at the water intakes of the cities of Ashtabula and Conneaut . . . that it might also have serious effect at the water intakes of other cities . . . other industries . . .

The Board did not at any time even mention, let alone insist on installation of a $29 million evaporator . . . Mr. Lohse did make reference to the use of such an evaporator in another part of the country, but declared that the idea did not seem to have economic or practical application in the Ohio situation.

It was explained to Mr. Lohse that the Board had established something of a precedent in a similar situation on the Ohio River, where the Dow Chemical Co. is now drilling exploratory brine wells near Ironton, O. The Dow Co. on Oct. 16, 1952, was told that it might be assured of a discharge permit on the basis that 85 per cent of the brine wastes be disposed underground; that the 15 percent remainder be lagooned and discharged into the Ohio River only when (a) Ohio River flows at Dam No. 29 were in excess of 100,000 cubic feet per second; (b) chloride content at the Portsmouth water intake did not exceed 50 parts per million and hardness content (as $CaCO_3$) did not exceed 100 ppm; and (c) chloride content was not increased more than 10 ppm nor hardness content increased more than 8 ppm at the point of discharge.

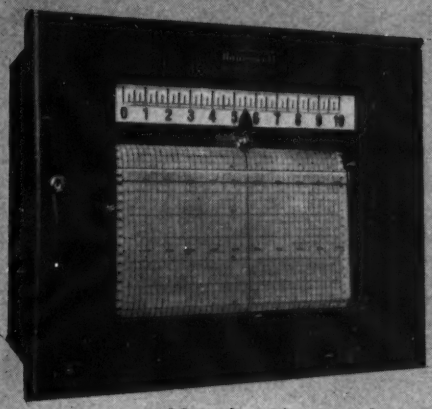
The Dow Co. accepted these proposals—and also the stipulation that the entire situation might have to be reconsidered and reevaluated if other similar industries should move into the same area—and has proceeded with its exploratory development . . .

ARTHUR ROBINSON
Director of Public Relations
Water Pollution Control Board
State of Ohio Dept. of Health
Columbus, O.

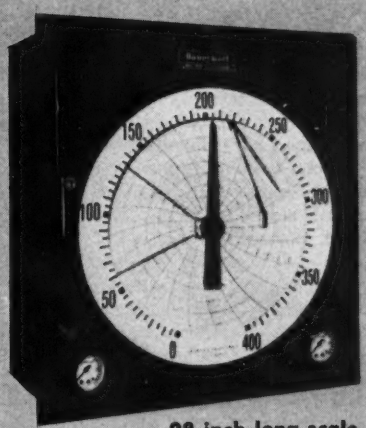
Even in Cosmetics

TO THE EDITOR: Anent your very interesting news articles on blood volume expanders (*May 9*) and hair lacquers (*May 23*) following are some additional facts on polyvinyl pyrrolidone which may interest your readers . . .

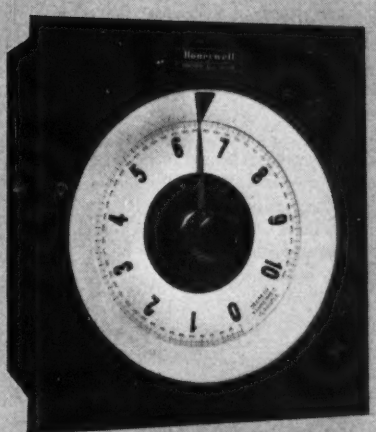
The Federal Civilian Defense Agen-



11-inch-wide strip chart



28-inch-long scale



"12 o'clock" control check

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FOR the last fourteen years *ElectroniK* instruments have been an important part of the industrial scene . . . for they were the first to bring high-speed, continuous measurement and control into practical reality in industry.

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These versatile instruments can measure, and often control, practically any process variable . . . temperature, flow, pH, conductivity, humidity, weight and dozens of others. They are available as indicators, recorders, and electric or pneumatic controllers . . . in many control variations, capable of handling the toughest assignments.

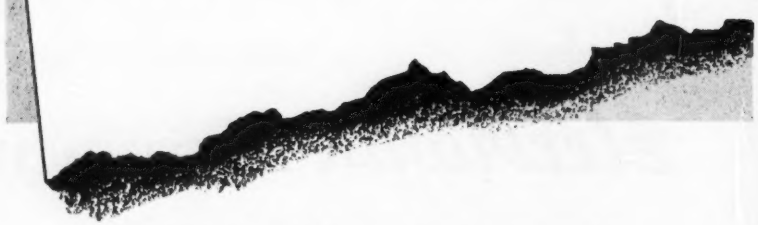
An outstanding record of dependability, accuracy and ease of maintenance has earned *ElectroniK* instruments an enviable reputation of accomplishment throughout industry. This stems from rugged, service-tested design of every component . . . design that assures uninterrupted service, optimum operation.

Your local Honeywell engineering representative will be glad to discuss how *ElectroniK* instruments can help in your lab or plant. Call him today . . . he is as near as your phone.

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cy has stockpiled 1,200,000 units of PVP. The Armed Forces are now procuring 500,000 units for stockpiling, being supplied by Abbott Laboratories using our bulk PVP.

The cost to the government per unit of PVP is currently about one-fifth that of dextran . . .

Incidentally, . . . PVP is now being used in a wide variety of fields . . . as a suspending agent for procaine-penicillin, drug vehicle and repository for procaine, tablet binder for antibiotics, iodine detoxifier, in hair fixatives, cosmetic creams, as a dye stripping agent . . .

JESSE WARNER
Director of Commercial Development
General Aniline & Film Corp.
New York, N. Y.

Good Antiquing, OK

TO THE EDITOR: In your news article on "instant" silver cleaners (*May 16*) you reported how *Good Housekeeping* had ripped into the makers of these products and disapproved of them because "repeated use of instant cleaners will result in removal of the oxidized, pattern-defining black deposit . . ."

French gray or "oxidize" or black antiquing on silver is usually produced by immersing or painting the article with a sulphur compound. However, the better grades of silver are grayed or blackened with a substance known in the trade as Platchrome Oxidize or, in rare cases, with platinum chloride solution.

These coatings are permanent . . . are not removed by solutions containing a cyanide or acid silver-dips containing thiourea. If the directions are followed, i. e., if the article is rinsed directly after the tarnish is removed, the proper forms of antiquing as well as the smooth finish on the silver is not in the least affected . . .

It should be pointed out, however, as you have done, that these solutions are not polishes but mere cleaners or tarnish removers . . .

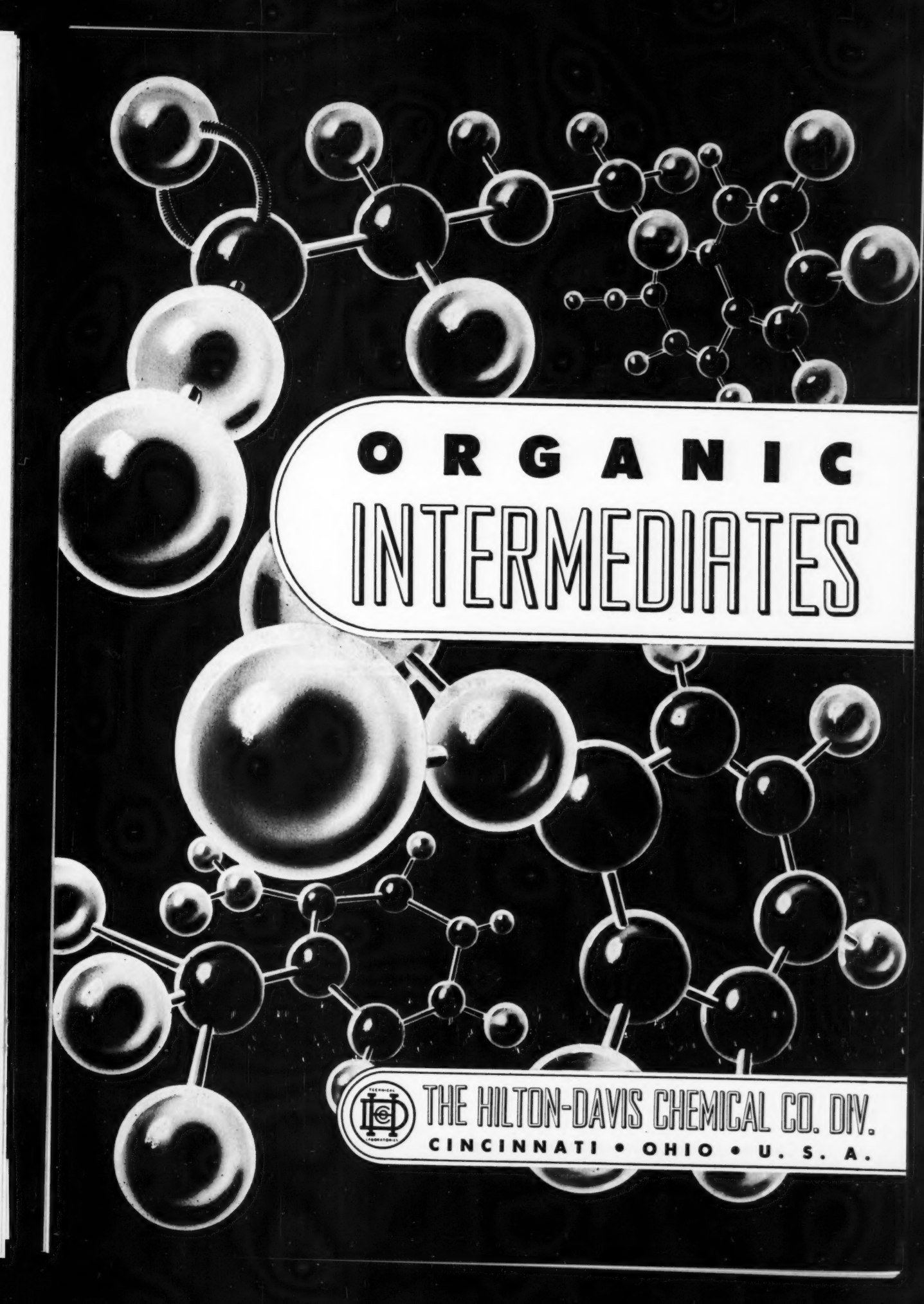
LAZARUS FALLER
Manager
Diamontine Co.
Chicago, Ill.

DATES AHEAD . . .

American Leather Chemists Assn., Golden anniversary meeting, Cincinnati, O., June 7-10.

American Soybean Assn., 33rd annual convention, Jefferson hotel, St. Louis, Mo., Aug. 20-21.

Conference on Nuclear Engineering, Univ. of California, Berkeley, Calif., Sept. 9-11.


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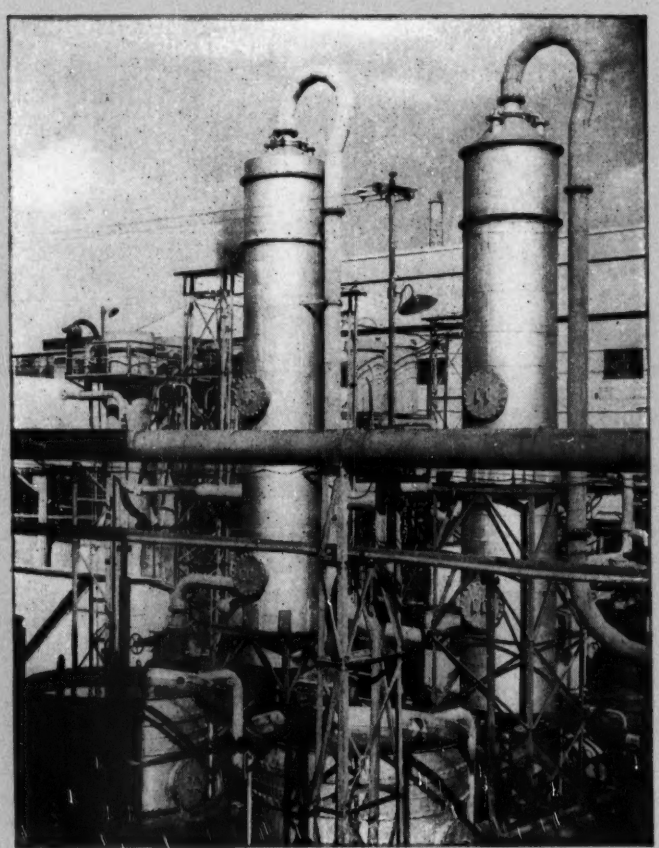
CHEMICO

offers a proven process for the production of

UREA

Chemico's process for the production of Urea is fully proved in actual practice. The overall ammonia efficiency is 97%; conversion of ammonium carbamate to Urea being approximately 76%. The process uses excess ammonia over stoichimetric requirements; the excess being recycled directly without compression.

The market for Urea is large, stable and offers a sound investment opportunity. In the plastics field Urea is the basic ingredient of Urea Formaldehyde Resins. Urea is an ideal fertilizer. It contains 46% Nitrogen. PH is approximately neutral. In the form of 1/16" granules coated with diatomaceous earth, Urea is much less hygroscopic than ammonium nitrate. Nitrogen in Urea is basically cheaper than that available in other solid forms. It is safe to make, ship and handle since it is non-flammable and non-explosive.



This Chemico-built Urea plant of Sumitomo Chemical Co. Ltd. in Niihama, Japan is in full commercial production. Expansion to three times its present capacity is now under way.

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Chemico plants are profitable investments

Chemical Week
BUSINESS MAGAZINE OF THE CHEMICAL PROCESS INDUSTRIES

NEWSLETTER

Even if you don't sell your products to the general public, where and how it lives and how much money it makes all affect your long-range planning. McGraw-Hill's economists have focused their spotlights on John Q. Public and his family, and this is what they see:

• U. S. population has grown 9% since 1947—to 156 million in mid-'52. All sections have shared in the growth (Pacific states, 11%; New England, 5%), so it's not necessary to move a thousand miles to new markets—they're right in your own backyard.

• But while there are only 9% more people, they live in 12% more households. It doesn't take much imagination to see tank cars of paint, tons of plastic going into new houses and furnishings. Leading proportionally in new urban housing are California and Texas.

• Older people (over 65) now comprise a 9% slice of our population pie, against a 7% slice in 1947. That's a 26% jump, and it means a bigger market for makers of drugs, vitamins, other health products.

• Income and savings are tending toward equality in all sections of the country. They're still higher per capita in the Mid-Atlantic, Great Lakes and Pacific States, but laggard sections are catching up, providing proportionally greater consumer markets.

• Farm employment dropped 15%. That means larger, business-managed farms—and fewer marginal, man-with-a-hoe operations. Ag chemical makers should find a more receptive market among these relatively more substantial entrepreneurs.

All this adds up to a bright future for U. S. chemical firms, but foreign producers are flexing their muscles, too, stepping fast to grab a share of world markets:

• Imperial Chemical Industries Ltd. sold more than ever at home last year, and more than ever abroad. Total exports rose 7% over the previous year, to $186 million. (But exports to the dollar area fell.)

• An agreement among Aluminum Co. of Canada, Aluminum Co. of America and Kaiser Aluminum, whereby the former will sell 786,000 tons of primary aluminum to the domestic firms over the next six years, is probably a death blow to expansion plans by Olin Industries and the Wheland Co. The Alcan tonnage exceeds that planned by Olin and Wheland, and these two firms—although they received fast tax write-offs—had already found capital hard to come by in today's tight money market.

One expansion that is going ahead is the Missouri Farmers Assn.'s $3.5-million fertilizer plant near Joplin, Mo. The construction contract was awarded last week to Merritt-Chapman & Scott; building will start immediately. The Dorr-designed plant will produce phosphoric acid, which with ammonia will give ammonium phosphate. Muriate of potash will be added to provide a complete range of products.

Research is expanding, too. Mathieson has founded the Mathieson-Squibb Institute of Chemical Research and Engineering, will modify a 350-acre farm near Shawan, Md., bought last week, to provide an agricultural experiment farm as well as other research facilities.

Purveyors of pesticides and processors of phosphate rock are affected by recent legislative action in Florida. Through both houses and awaiting Governor Dan McCarty's signature is a bill requiring annual registration of all pesticides made, sold or transported in the state. The measure sets up labeling requirements, establishes registration fees, and empowers the state commissioner of agriculture, upon the advice of a technical committee, to refuse or cancel registration. Through the house and awaiting senate action is a bill prohibiting intentional dumping of phosphate wastes into the Peace River, which flows through four counties in the phosphate processing area south and west of Bartow.

The krebiozen controversy (CW, May 23) is still nowhere near a settlement. The Illinois state legislature has just appropriated $10,000 to extend its investigation until January, 1955.

South Carolina community boosters are worried about their inability to attract private industry to the area opened up by the atomic energy plant on the Savannah River. Lures they cite: abundant electric power, plenty of labor and housing now that the H-bomb construction program has passed its peak.

Watch for a big drive by chamber-of-commercers and city officials to counteract what they feel is the reason for industry's reluctance: fear of organized labor. Already, the area's newspapers are saying that atomic wage rates are no higher than prevailing levels, that labor strife at the AEC plant was exaggerated and overpublicized, that South Carolina workers really don't like unions, anyhow. The obstacles to industrialization of the area, they contend, are psychological—not physical, and they're out to attract industry and its accompanying paychecks.

Last week saw a confluence of events designed to gladden the hearts of synthetic resin makers:

- Sun Rubber Co., Barberton, O., patented a process and automatic equipment to mold hollow vinyl products—watercloset floats, footballs, etc.—heretofore more readily fabricated from rubber.
- Libbey-Owens-Ford offered royalty-free licenses to foundries for use of urea core-binder resins in casting light metals.
- The Defense Department's Defense Supply Management Agency issued a single specification for thermosetting resins suitable for glass-resin laminates. It is part of an over-all research effort looking toward substitution of plastics for metals and wood in many military items.
- Concurrently the Munitions Board completed a study listing metals used for military engineering and design in their relative strategic value. It points out that nonmetallic paints or plastics should be used wherever possible instead of metallic coatings—zinc, cadmium, etc., which would be short in case of total war.

A new company, Continental Blacks, Inc., plans to build a $2.75-million plant at Ponca-City, Okla., to make high-abrasion carbon black from oil. Targets: completion by mid'54; 40 million lbs. annual capacity.

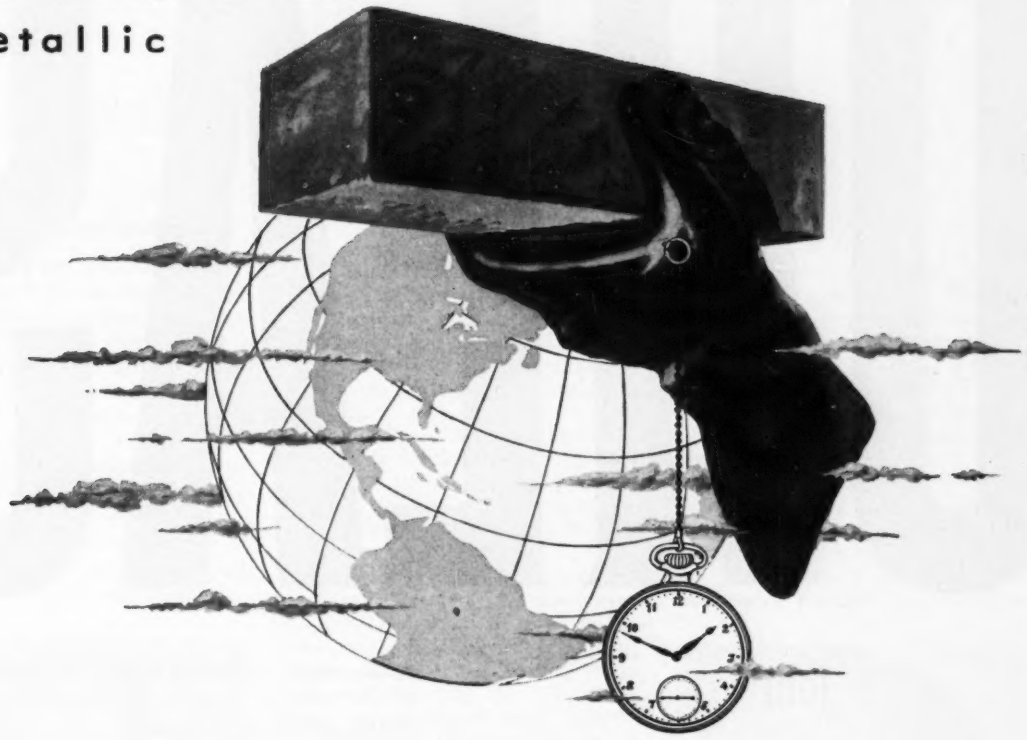
The company is jointly owned by Continental Oil and Continental Carbon Co. Continental Carbon, in turn, is owned by Continental Oil, Shamrock Oil and Gas and Witco Chemical through its president and owner, Robert I. Wishnick.

Witco, which is exclusive sales agent for Continental Carbon (as well as for the related Continental Oil Black Co.) will perform the same service for the new firm.

. . . The Editors

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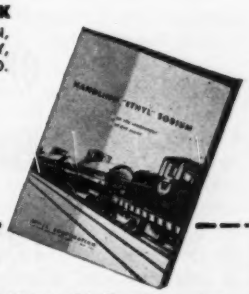
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BUSINESS & INDUSTRY . . . .

Backdoor Sentries

This year's battle over U.S. foreign trade policy is in its crucial stages, and two chemical industry organizations shouldered arms last week in an effort to keep reduced tariff rates from coming in via the back door.

Cary R. Wagner, speaking for both the Synthetic Organic Chemical Manufacturers Assn. and the Manufacturing Chemists' Assn., told the House Ways & Means Committee that the "Customs Simplification Bill" (H.R. 5106) is not the innocent streamlining measure that its title indicates.



SOCMA'S WAGNER: Sympathy for aims of bill, not for its provisions.

Instead, he testified, the bill "in reality is a proposal that would effect a substantial reduction in duties," and in so doing could "sow the seeds of destruction" in the chemical industry.

Three Bills Pending: While his committee ponders this so-called simplification bill, Chairman Dan Reed (R., N.Y.) also has two other tariff measures to handle. One is the Simpson bill, which has certain protectionist features; and the other is a proposal for merely extending the present Reciprocal Trade Act for one year.

Still another important bill on this subject is Senator Millikin's resolution, already passed by the Senate, for creation of a bipartisan committee to study foreign trade policy. This resolution—almost certain to be passed by the House—calls for a joint Executive-Congressional panel that's likely to be protectionist in sentiment, with seven Republican and four Democratic members.

Reed has predicted that the simplification bill will skim through his committee and the House of Representatives, as it did last year before it bogged down in the Senate Finance Committee.

But if the Congressmen are moved by Wagner's arguments, the Jenkins bill (as it's also called) won't be enacted without a lot of revamping. Wagner bespoke the chemical industry's sympathy with the bill's objectives, and mentioned with approval its elimination of a penalty on an importer who overvalues his merchandise.

Opposition to the bill was based on these points:

- Its deletion of "foreign value" as one of the primary bases for valuation of chemicals.
- Its deletion of a requirement that now gives to the U.S. processor who buys foreign materials outright and uses them as intermediates an advantage over the foreign consignor who sells in the U.S. through an agent.
- Various definitions (comparative value, constructed value, export value, U.S. selling price) that would result in lower valuations.
- Its provision that would permit imports without certified consular invoices.
- Its elimination of additional duties now imposed on undervalued imports.

Auction Timetable

Under terms of the bill being considered this week by the rubber subcommittee of the House Armed Services Committee, the government's synthetic rubber plants—built at a cost of around $480 million—could be in private hands within nine months.

Nobody really expects things to happen that fast, but here's how it could work out if no headwinds are encountered: Subcommittee Chairman Paul Shafer's bill adopted by July 1, commission appointed by President Eisenhower by Aug. 1, bids received by Dec. 1, sales plan submitted to Congress by next Feb. 1, and approved by Congress by March 1.

Shafer, regarded as the most influential man in Congress on rubber legislation, is strong for prompt action on turning the plants over to private industry, and it's expected that his views will be generally adhered to as Congress frames a law governing the selling. In addition, there appears to be considerable pressure on the Republican leadership to take the government out of this business.



MICHIGAN'S SHAFER: For synthetic rubber plants, a 1-year disposal plan.

Speculators Not Invited: Shafer's bill (H.R. 5425) calls for a somewhat brisker pace than the Reconstruction Finance Corporation's recommendations (*CW Newsletter, Mar. 7*) were attuned to. For one thing, it sets up a definite timetable for completion of certain tasks after the bill is adopted. Another difference: the Shafer bill contains requirements aimed at keeping quick-money "outsiders" from grabbing the plants away from bona fida rubber and chemical companies as a shot-in-the-dark speculation.

Reactors Proceed



ADVISER STRAUSS: For expediting amendments, a sponsor . . .

"I can see why the utilities are interested in atomic power, but why have the chemical companies taken such an interest in the program?"

The answer is far from simple. It combines several hard-headed business reasons with the altruistic one of patriotism in time of national emergency.

One business reason: the security curtain around atomic installations. If a close competitor has his head "under the uranium curtain," you, too, want to know about new classified research.

Some firms are interested in the processing aspect of atomic power; they see a chance for profit in, say, separating plutonium from unchanged uranium. Or perhaps, they look for incidentals—learning about such corrosion-resistant materials as tantalum or niobium.

Companies that use a lot of electric power have a direct interest therein. Monsanto, for example, might see atomics as the most economical power source to exploit its Idaho phosphate. Or a power-type reactor might be desired as a source of high-temperature uniform heat.

But perhaps the most promising reason is to investigate radiation catalysis. Present work seems to show that radiation will trigger several types of reactions. And while no company will be specific in talking about its research—the patent situation on nuclear matters is still unclear—there are indications that radiation will trigger polymerization (e.g., ethylene to polyethylene); oxidation (of hydrocarbons, for example); and halogenation.

That's why chemical companies are prominent in the private-industry groups that are studying the feasibility of private atomic power generation. And this week, the Atomic Energy Commission took one step towards its eventual goal of a public-private partnership in the U.S. nuclear energy program by declassifying summaries of the first atomic power generation proposals made to it by four of these study groups.

(A second step may come soon, as the Congressional Joint Atomic Energy Committee scheduled June 15 as the first day of hearings on modification of the Atomic Energy Act.)

These feasibility summaries—which represented a year's time of 100 scientists and engineers from eight corporations, as well as about a million dollars in expense to their employers—are generally optimistic as to the technical and economic aspects of privately sponsored atomic power generation.

The AEC, when it first negotiated with the groups, had set two limitations: It asked that they begin by considering reactors that (1) would produce both power (as heat) and fissionable materials (uranium-233, plutonium), and (2) are familiar enough to nuclear scientists that detailed engineering studies could be completed rapidly.

The teams generally used conservative concepts and proved reactor designs. Each came up with a unique solution (*see technical summary, below*), but, equally important, each presented a different concept of the industry-AEC cooperation necessary for plant construction:

- Commonwealth Edison, Public Service (Northern Illinois). The group would build and operate its entire plant (probably using a heavy water-moderated and -cooled reactor); the government would pay for the reactor and keep the U-233 or plutonium produced; the utilities would foot the rest of the bill.
- Dow, Detroit Edison and associates.* If further studies show that the group's design is able to supply steam to the turbine throttle for less than 59.4¢ per million Btu, capital from the companies would finance the whole construction. They would not ask for government help in the form of a plutonium purchase contract.
- Monsanto, Union Electric. The

* The associates, which have joined the project since Oct. '52, include 25 other firms—mostly utilities.

Technical Summar

In brief, these are the technical details of construction and operation of reactors recommended by the four groups:

Commonwealth Edison—Public Service
The group proposed two reactors, both employing thermal (slow-moving) neutrons. The first is a helium-cooled, graphite-moderated reactor, similar to ones now operating at Brookhaven and Hanford. It would use natural uranium fuel, formed not in the customary cylinders but in a type with radiating fins for better heat transfer. The plant would supply 61,700 kw. gross power, with a net generation of 46,700 kw. Cost, not including fuel element fabrication and processing facilities for plutonium: $40 million. It could be in operation four years from authorization.

The second is an Argonne-type reactor using heavy water for cooling and moderating. Natural uranium, inside a thin metal casing, would be the fuel. Gross power: 225,500 kw., net of 211,500 kw. Cost, not including fuel fabrication or

aw Stands Still



CONGRESSMAN COLE: For suspicious solons, a mollifier.

companies would ask the government to build and pay for a pilot-plant unit. If the design proved out, the companies would erect and pay for a full-scale plant and would sell power to public, and U-233 or plutonium to the government.

• Pacific Gas & Electric, Bechtel Corp. Here, the group would continue their studies pointing toward a full-size fast reactor to produce both power and the fissionable U-233 or plutonium. The companies would build the generation end of the plant with their own funds, and the government would pay for the reactor end. The concerns then would lease and operate the reactor, and have an option to buy it.

At present, a fifth study is also underway. Participants are Foster Wheeler Corp. and Pioneer Service & Engineering.

North American Aviation, looking for broader peacetime diversification, has designed an atomic-powered electric pilot plant. Such a plant could be built, it reports, for $10 million. Now it is looking for a client.

Law Looms Large: But while the reports indicate that the technical and economic problems at least admit of solutions, they are dwarfed by the political aspects of the situation.

Declassification of the summaries serves to highlight the coming hearings over the need for amending the Atomic Energy (McMahon) Act of 1946. The McMahon Act was passed when the U.S. believed that it was the only nation that knew how to make an atomic bomb. Hence, it set up an absolute government monopoly. The commission was given exclusive ownership of fissionable materials, production facilities, control through licenses of the uses of fissionable materials, ownership of all patents, and control of all information on the production and use of fissionables. In effect, the commission received the same powers that previously had been vested in the Army through the Manhattan District program.

The present need for monopoly and secrecy is radically changed. Two other nations have proved they know The Secret; several countries have advanced-design atomic reactors operating.

In 1946, no one could foretell the commercial possibilities and values of atomic energy; by now, even the conservatives in the far from radical public utility field are taking a long hard look at the field.

Among those most aware of these changes in the status of peacetime atomic energy are the top men in the AEC itself. Prompted by the changes, and perhaps, too, by the industry team reports that atomic power might already be economically on a par with other power sources, the AEC commissioners came to a decision that private competitive industry should get a chance to develop atomic power.

As a result, it has submitted its ideas on necessary changes in the McMahon Act to Lewis Strauss, Presidential adviser on atomic energy and to the Congressional joint committee, chairmanned by W. Sterling Cole. Among the revisions in the Act proposed by the AEC:

• Allow private ownership of

f Industry Atomic Power Plans

processing, $118 million. Operation lead time: within five years.

Dow-Detroit Edison

The report of this team discussed general problems, did not make estimates on reactors using proved technology since it felt that time and expense of such a project would be as great as that to develop a fast-neutron process. Five fast-neutron reactor variations reported, all using liquid sodium as coolant; four of these use radiator-type heat transfer with liquid or slurry fuel, the last—and best, theoretically—uses liquid fuel and liquid coolant jet-mixed and centrifugally separated. The fuel would be continually processed to remove impurities.

Monsanto Chemical—Union Electric

Two variations of the Hanford-type thermal neutron reactor occupied this group. It felt, however, that to provide an economical temperature level for power generation, liquid sodium would be needed as coolant. U-235-enriched fuel slugs would be hollow, allowing external and internal heat transfer. Not including land, financing charges, taxes and profit, a 210,000-kw. plant could be built for $26 million (generation cost, 4.13 mills/kwhr.); a 554,000-kw. plant, for $61 million (3.73 mills/kwhr.); and a comparable coal-fired plant of 260,000 kw. for $44 million (3.97 mills/kwhr.).

Pacific Gas & Electric—Bechtel Corp.

This team made two proposals: a water-cooled, heavy water-moderated thermal reactor for immediate construction; a sodium-cooled fast reactor later.

The thermal reactor, which would use natural uranium, would supply 106,200 kw. gross and 100,600 kw. net. Cost, not including fuel fabricating and processing facilities, $41 million. Annual operating costs, $1.58 million.

The fact reactor, using U-235 for fissionable material in conjunction with U-238 (or thorium), would produce 154,600 gross kw., and 145,300 net. Cost, again not including fabricating and fuel processing, would total $51 million. Yearly operating costs, $1.52 million.

atomic reactors and of thorium, uranium and plutonium, subject to AEC regulation on operational safety and security of information.

• Allow the commission to sell fissionable and potentially fissionable materials needed for such private operation.

• Permit—but not obligate—the commission to purchase such mate-

• Require that private operators assure their plant of security against sabotage, as contractors now do.

• Extend antitrust laws to cover private atomic operations.

These points leave several problems still to be discussed—e.g., ownership of patents developed privately, state utility regulation, labor relations—and raise others—e.g., Should the government subsidize any private operation? Should the government, in case of war, continue to supply private interests with fissionable material that might be needed for weapon purposes?

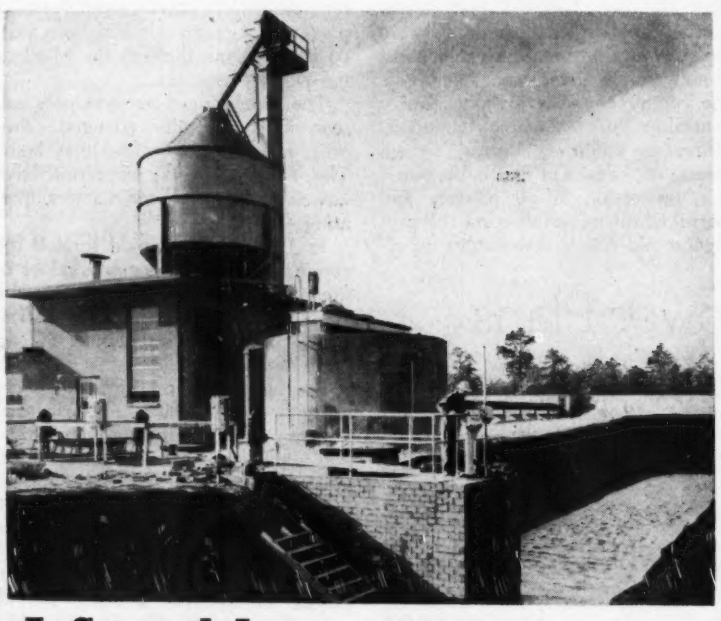
By the Horns: For Strauss and Cole, as chief shepherds of these changes, this summer will be both hot and difficult. When Cole's committee hearings are over, he and Strauss will have to coordinate committee and Presidential views, first with each other and then with the Defense Department, the National Security Council—and with the AEC itself. And since the hearings will undoubtedly feature such conflicts as that between public and private power interests, there may be some reconciling to do.

In addition, Cole has forecast that it will be 1954 before any legislation is sent to Congress. In itself, this is uncertain, since without doubt, the charge will be made that amendment is little more than a "$10-billion atomic steal."

Lesser Troubles: By comparison, technical and economic difficulties are small. The range of proposals from its study groups is wide enough for the AEC to pick the plan it feels is the best. If it wanted, it could use this as a bargaining lever with other interested parties.

In addition, the AEC has an extra enticement to industry. When its budget was originally set up, an appropriation for several experimental power-generating reactors—which would have cost $5 million apiece—was included. The Eisenhower administration deleted this before sending the AEC budget to Congress. Now industry must put up all the money—but hence reap all the gain.

The real problem for the AEC—and Shepherds Strauss and Cole—is still to steer through Congress amendments balancing the necessary opportunity for private industry with the still-necessary amount of security.



A Second Leg

AFTER THREE YEARS of construction at a cost of more than $17 million, Ciba Co. unveils its Toms River vat dyestuffs plant. Initial product: 4 million lbs. of anthraquinone annually—over 10% of total U.S. production.

Occupying more than 35 acres in New Jersey's playground area, Ciba's elaborate effluent treatment area neutralizes waste, lays groundwork for congenial community relations. Due soon: a fish pond, designed to prove purity of effluent.

COMPANIES . . . .

Alcoa Mining Co., a wholly owned subsidiary of Aluminum Co. of America, was liquidated this week. Reason given: to simplify the parent company's corporate structure. The subsidiary's operations will be transferred to the newly created Mining Division of Alcoa; no changes in functions or responsibilities of personnel are anticipated.

•

Chemical companies are watching the talk about pipelines in British Columbia these days. Before the wrinkles had been ironed out of a plan to bring a natural gas line as well as an oil line into the province, a new pipeline idea has sprung up.

A. E. Grauer, president of the British Columbia Electric Co., Ltd. urges construction of a line to carry the by-products of natural gas from Alberta's Peace River district to B. C. His guess: "There is a good chance of a chemical industry of some size being established in the greater Vancouver area."

EXPANSION. . . .

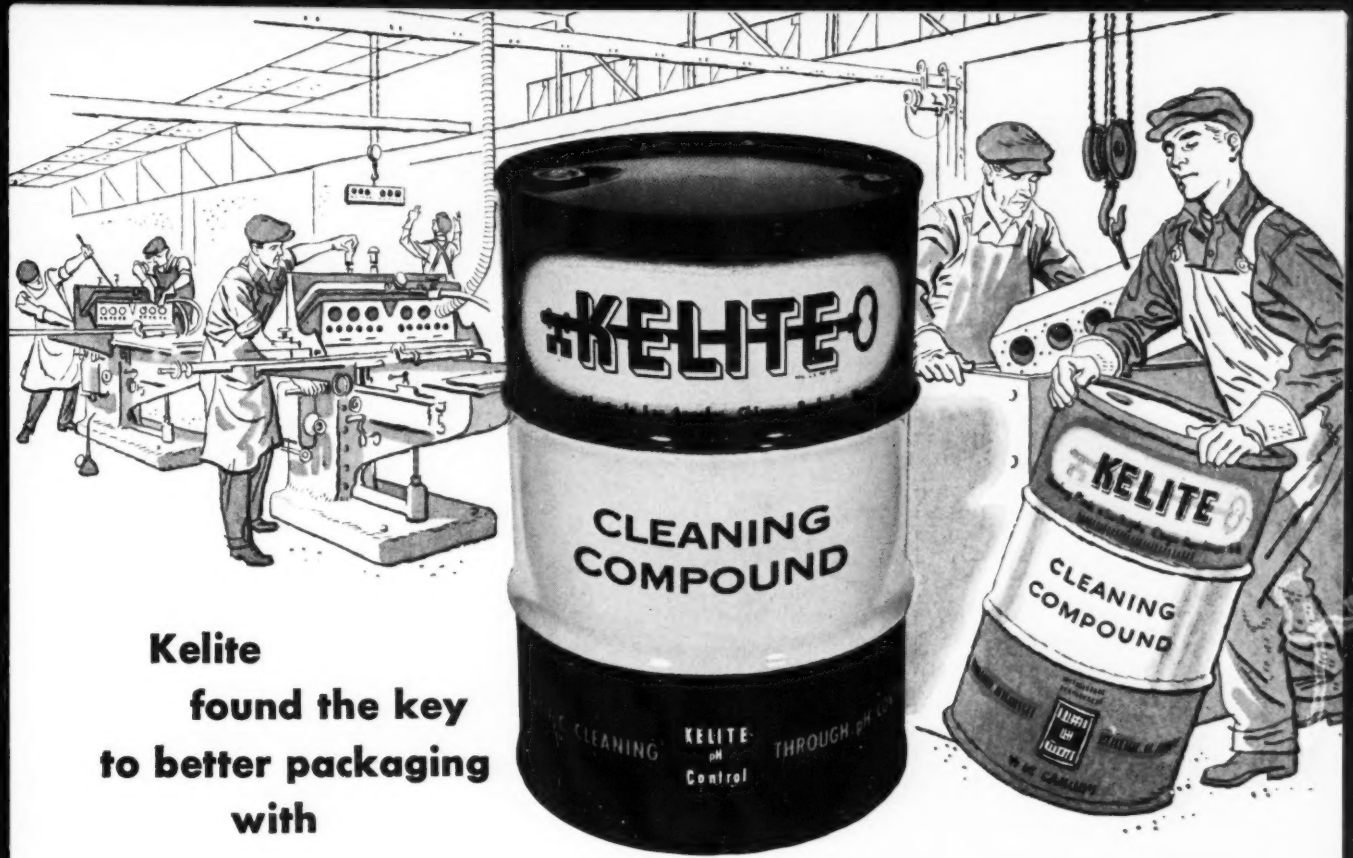
Synthetic Rubber: A $300,000 synthetic rubber compound plant will be built soon near Malvern, Ark., to be operated by Rubarite, Inc., owned jointly by Goodyear Tire & Rubber Co., National Lead Co., and Berry Asphalt Co.

•

Ammonia: Utah Chemical Co. plans to build an $18.8-million ammonia plant in southcentral Utah, seeks an NPA amortization certificate. Proposed sites: the Sanpete Valley, or near Nephi. The plant will produce ammonia, nitric acid, and ammonium nitrate, in daily lots of 278, 475, and 587 tons/day respectively.

•

Tax Write-Offs: The Office of Defense Mobilization granted tax write-offs last week to Monsanto Chemical Co., Texas City, Tex., 45% of $16.8 million for nitrogen production facilities; Union Carbide and Carbon Corp., Marietta, O., 45% of $6,322,000, for polystyrene resin compounds; International Minerals & Chemical Corp., Tuscola, Ill., 55% of $10.5 million, for nitrophosphate fertilizer; Stauffer Chemical Co., Whiting Ind., 70% of $1,930,000 for sulfuric acid.



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Debt and Preferred Stock as Percent of Total Capital (20 Chemical Companies)

Company	1951	1952	Company	1951	1952
Ups			Downs		
Allied Chemical & Dye	0.0	14.9	Air Reduction	43.7	41.9
American Cyanamid	22.5	34.5	Atlas	38.3	37.3
Commercial Solvents	20.8	40.1	Diamond Alkali	32.6	31.2
Dow	30.6	41.4	Du Pont	19.5	17.4
Hooker	28.2	52.4	Hercules	12.8	12.2
Monsanto	23.2	36.1	Heyden	58.6	57.9
Rohm & Haas	15.3	25.8	Mathieson	46.9	44.3
Spencer	58.0	66.0	Merck	40.1	38.8
Union Carbide	20.4	28.1	Pfizer	24.1	22.6
			Pennsalt	11.0	9.1
			Victor	60.2	58.1
	1951	1952			
Composite Weighted Average:	22.9	27.9			

Striking a Balance

New large debenture offerings by a host of chemical companies focuses attention on a change in financial thinking by the chemical industry.

For generations chemical companies were noted for the small amount of securities ahead of equity capital. Even at the end of World War II, more than a third of the leading chemical companies in the industry had no debt or preferred stock outstanding.* This situation was responsible in part for the relatively high ratios of share price to earnings.

Now the pendulum seems to be swinging heavily toward long-term debt; more and more chemical companies are turning to debt to trim the costs of continued expansion (*CW, Dec. 20, '52*). Between the years 1946-1951, says security analyst John Bohmfalk, Clark Dodge & Co., a selected group of 20 chemical companies required a total of $2.9 billion to foot expansion costs. Of the total, only 73% was covered by depreciation reserves, retained earnings, new common stock. The trend was starting: the proportion of debt and preferred stock in the average capital structure of the group rose from 19% to 23%.

Building Up Steam: At the end of 1951, Allied, with no preferred stock or debt, had the lowest percentage of senior capital (debt, preferred stock) —none. Victor had the highest ratio—60%. Union Carbide, Pennsalt, Commercial Solvents had some long-term debt, no preferred stock; Du Pont, Hercules, Pfizer had preferred stock, no long-term debt.

By the end of 1952, however, the trend to long-term debt financing had gained momentum; common stock and surplus bulked smaller. In terms of a composite average, the score stood:

	1951	1952
Long-term debt	10.4%	17.6%
Preferred stock	12.5%	10.3%
Common stock and surplus	77.1%	72.1%

The change is largely attributable to specific large-capital companies jumping on the debt-for-expansion bandwagon. Among them:

- Allied, a big factor, added $50 million in debt financing during 1952. (Its $200-million debenture offering in '53 will further tilt the scales.)
- American Cyanamid chipped in with $65.2 million in debt financing; Commercial Solvents came up with $15 million.
- Dow added a mighty $88.4 million; Rohm & Haas took on $8.2 million in senior capital.
- Hooker more than sextupled its long-term debt, jumped it $16.4 million.
- Mathieson almost doubled its debt financing, climbed $38.9 million. However, its effect on capital structure was mitigated by a large chunk of equity acquired (as well as debt) with Squibb.
- Monsanto's debt bounded from $30.3 million to $97.1 million, but here again the effect on capital structure was held in check by considerable sale of common stock.
- Union Carbide added $90 million in long-term debt.

How They Stand: In terms of percentage of long-term debt at year's end, Commercial Solvents surpassed Mathieson; Hercules, Du Pont and Pfizer still had no long-term debt. Their percentile positions in long-term debt: Commercial Solvents, 40% of total capital; Mathieson, 36%; Spencer and Dow 34%; Cyanamid, 32%; Monsanto, 31%.

Pennsalt had the largest per cent of common stock equity in the group—90.9%. Hard on its heels is Hercules, its common stock equity amounting to 88% of its total capital structure. Allied is third with 85.1%.

Since the chemical industry in general has been able to sell preferred stock on very favorable terms, companies have tended in the past to rely on it to provide leverage* by means of senior capital. Moreover, because undistributed earnings have been capitalized at a high rate in the stock market, common equity capital has held a special fascination for company treasurers.

Today, however, management seems to be taking stock of itself, ridding itself in some cases of ultraconservatism, trying earnestly to bring its capital structure up to date. The result: though diversity in capital structure has been an accepted norm in the chemical industry in past decades, today's trend is toward a middle path, greater uniformity among companies. Chemical companies are coming to recognize the value of a "healthy" balance in capital structure. Their willingness to assume a heavier proportion of long-term debt reflects belief in the future, firmness of the industry's footing.

* In 1945, Allied, Commercial Solvents, Diamond Alkali, Monsanto, Pennsalt, Pfizer, Union Carbide were in that category.

* Leverage is the extra earning power given to a company's common stock by the use of senior capital, which can be put to work at a high rate of return to the company, and requires only relatively small fixed payments to the senior security holders.

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Joining the Ranks

Warren Petroleum Corp., Tulsa, Okla., has officially decided to take the plunge into the petrochemical field. Its initial move: construction of a plant at the company's Warrengas terminal on the Houston Ship Channel, expected to be completed by Jan. '54. Plans call for use of the hydrocarbon oxidation process to convert either propane or butane into pentaerythritol, methyl alcohol, acetaldehyde. Estimated annual output: 2.5 million lbs. of pentaerythritol; 4 million lbs. of methyl alcohol; 2 million lbs. of acetaldehyde.

Decision to go into petrochemical production follows Warren research lab improvements of the oxidation process on which the company has held patents for some time. Pilot-planting of the improved process has indicated to the company's officials that it is now ready to meet all comers. No additional financing in connection with the plant is now contemplated.

LABOR . . . . . .

No Censorship: With the National Labor Relations Board refusing to worry about the truth or falsity of labor union "campaign promises" unless coercion or intimidation is involved, a runoff election is being held this week at Merck's big plant in Rahway, N.J., between United Gas, Coke & Chemical Workers (CIO) and Employees Organization of Merck & Co.

In the original election, Gas-Coke received 685 votes, EOM 545, International Chemical Workers Union (AFL) 154, no union 11. EOM complained that the results had been unfairly influenced by a Gas-Coke pamphlet headed, "The EOM Top Dogs Like Their Petty Graft." NLRB rejected the protest, holding that the leaflet was "obvious propaganda, clearly recognizable as such by the employees, who were and are entirely competent to evaluate such material."

Another important runoff election scheduled for late this week is at Du Pont's neoprene plant in Louisville, Ky., between ICWU and the Neoprene Craftmen's Union. NLRB has upheld the AFL union's protest of a previous runoff in which the Craftsmen had come out on top, 671 to 662 (*CW, Oct. 18*).

•

H-Plant 'No': One place where there won't be a runoff is the Savannah River Project near Aiken, S.C., where Du Pont is getting ready to make H-bombs for the Atomic Energy Commission. The H-bomb workers last week showed their preference for company terms by rejecting two union bids, thus: AFL 700, CIO 135, no union 966. This was the plant where a Gas-Coke organizer had been arrested by company guards as he passed out leaflets to workers (*CW, Mar. 21*).

•

Fertilizer Contracts: From the South and Southwest comes news that will mean steady output of fertilizer materials for the next 12 months.

• At Bartow, Fla., all major producing companies in the Polk County phosphate field have come to terms with ICWU locals. Wage increases were small, ranging up to 4¢/hour, but were accompanied by a number of fringe benefits, such as one extra holiday. International Minerals & Chemical Corp., which operates the largest unit in the field, was out of production for four days while employees held a "continuous meeting" to decide whether to accept the company's offer. Other firms making one-year settlements: American Agricultural Chemical, American Cyanamid, Armour Fertilizer Works, Davison Chemical, Swift & Co., and Virginia-Carolina Chemical.

• At Carlsbad, N.M., the five big producers in the Permian Basin potash field have settled with three labor unions. Signing with the International Union of Mine, Mill & Smelter Workers were Duval Sulphur & Potash, International Minerals & Chemical, and Potash Co. of America. United States Potash entered into a similar contract with the independent Carlsbad Potash Union. Basic wage rates are up by 22¢/hour, including 18¢ previously paid under a cost-of-living escalator clause and 4¢ in new money. Top mine rates now are $2.07/hour, and maintenance workers receive up to $2.10 under separate agreements with two AFL unions—Machinists and Electricians. To this will be added a production bonus, and this will affect Southwest Potash Corp.'s recent contract with District 50, United Mine Workers, because that pact contains a "grandfather clause" permitting reopenings to negotiate gains listed in the other contracts.

•

A-Plant Signing: Quickly following their contract covering the atomic plant at Paducah, Ky. (*CW, May 23*), Carbide & Carbon Chemicals and CIO's Gas-Coke have shaken hands on a similar 5¢ increase for the 3,200 production workers at the K-25 gaseous diffusion plant at Oak Ridge, Tenn. New rates vary from $1.44 for common labor to $2.30 for craftsmen. An additional holiday (Armistice Day) was granted.

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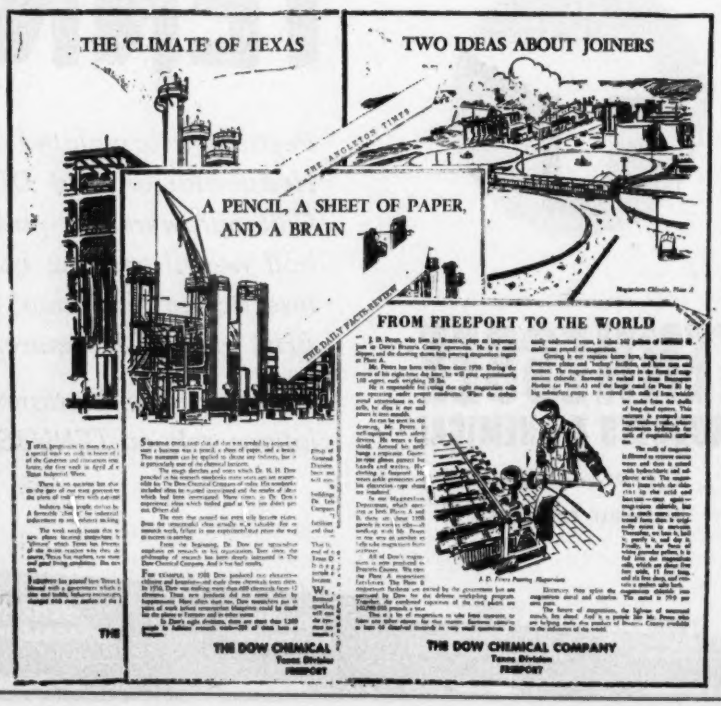
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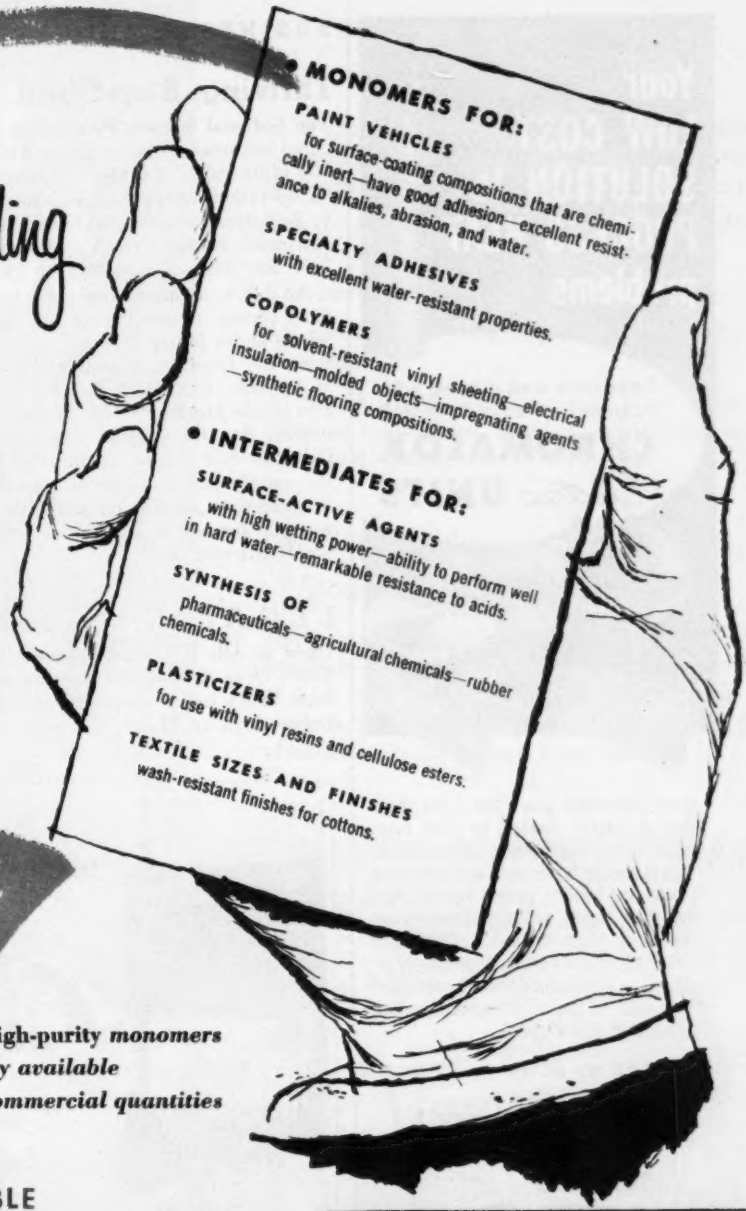
And TV Makes Three

Dow's Texas Division is beaming a three-pronged pitch at people in the Freeport area. The purpose: to show its neighbors just what goes on within the plants, Dow's part in U.S. production. A weekly radio broadcast is designed to review and explain the workings of various departments; series of ads, appearing in local newspapers, put on the finishing touches.

Planned in quarter-hour sessions, each broadcast is designed to explain a particular phase of operations. Already covered: vinylidene chloride, styrene, magnesium, caustic soda, power. Key personnel make up the panel, provide information ranging from early research to newest uses. Programs are taped in advance, then rebroadcast. Next on the slate: television.



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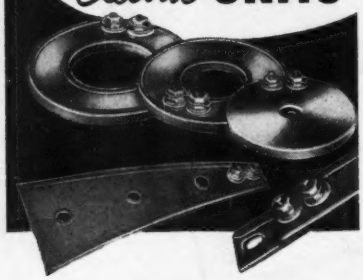
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Thriving Step-Child

The National Science Foundation decided last week to invest about $100,000 of its 1953-'54 budget in carrying on operations of the National Scientific Register, the nation-wide technical personnel census, which it adopted from the Office of Education in 1950.

An office to house the joint technical society nose-counting has been set up under James W. Cole, on leave from the Dept. of Chemistry, Univ. of Virginia, Charlottesville, Va. NSF sees ample justification for its project: it feels that the register should provide the best source of statistics on the supply and demand of scientists in peacetime, would be available in wartime for use in locating scientists with particular skills.

LEGAL. . . . . .

Open to All: If Congress adopts the Food, Drug & Cosmetic Act amendment that's being proposed by Rep. Robert Hale of Maine, it'll be a simpler task to make or revise FDA regulations on food adulteration, branding and coloring. One way the Hale bill (H.R. 5055) would change procedure: regulations or modifications could be proposed by the Secretary of Health, Education & Welfare or by any interested party; at present, proposals may come either from the secretary or from "any interested industry or substantial portion thereof." Next, Hale would permit the FDA to dispense with the public hearing on the proposed regulation unless some person who would be adversely affected files detailed objections within 30 days.

•

Chemists Ask $150,000: Two research chemists who invented a liquid called "Pantopaque" for use in X-raying back injuries are suing the Univ. of Rochester (N.Y.), its business subsidiary, Noned Corp., and Eastman Kodak Corp. John T. Plati, Rutherford, N.J., who did research work for the university from 1936 to 1940, and William H. Strain, Irondequoit, N.Y.,



Still Going Strong

BENJAMIN M. DUGGAR, discoverer of aureomycin, gets a first-hand look at its clinical application at the Kozugakuen Orphanage, Osaka, Japan. Forced by state law to retire from the staff of the Univ. of Wisconsin, where he taught botany at the age of 71, Duggar joined the Lederle Lab. Div., American Cyanamid Co., in 1944 as consultant in antibiotic drug research. Early 1948 marked his top scientific achievement—isolation of an organism from which aureomycin is produced.

Duggar is now immersed in an extensive trachoma control project, jointly sponsored by Lederle, Takeda Pharmaceutical Industries at Osaka, and the Social Welfare Society of the Mainichi Press. Its object: to treat more Japanese victims of the disease, which is a principal cause of blindness there.

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who was employed from 1937 to 1943 by Eastman and since then by the university, claim they're entitled to a share of any profits from sale and development of Pantopaque. The university and Eastman deny they had such an agreement with the chemists, add that during the life of university-Eastman agreements in 1940-'41, research and development expenses were substantially higher than income, and there were no profits to share.

•

He-Man Hormones: In New York City, the U.S. District Attorney is asking the court to enjoin a firm from billing a certain product as a virility restorer. The government's petition states that Canal Medical Products has been buying wheat germ oil from an Illinois processor, repacking it in bottles of 90 or 270 capsules, and selling it throughout the United States under advertising that represents or suggests "that the drug contains hormonal activity equivalent to therapeutically significant amounts of testosterone and estrone; that it is an adequate and effective treatment for male hormone deficiency, impotency, loss of pep, and premature old age." The government contends that the drug simply can't do that much rejuvenating.

•

Fumes Kindle Lawsuit: A paper processing company has brought suit against an oil refining firm, its former next-door neighbor in Philadelphia, for $3,101,122. Connelly Containers, whose plant was destroyed by an eight-alarm fire last January, asserts that the blaze was due to negligence on the part of the Allied Oil Co. Deputy Fire Commissioner Paul B. Hartenstein reported after an investigation that the fire "undoubtedly would have been avoided" if a pipeline leak had been reported to the fire department. Allied denied responsibility for the fire.

•

Still More Papers: Du Pont, General Motors and U.S. Rubber defense attorneys in the antitrust trial at Chicago are fighting the government lawyers' request for a court order requiring the companies to provide another load of evidence in the form of sales data. GM Attorney Ferris E. Hurd warned that granting the request would mean postponing the case to next fall, charged that the government "is trying to obtain material for a substantially new theory of the case." Federal Attorney Ewart Harris said the additional information is needed because the defense had "muddied the record" with guesses and estimates of sales figures that should be exact for the trial record.

Star witness in this trial last week was Sir William Wiseman, who headed the British intelligence service in the U.S. during World War I and who now is a partner in Kuhn, Loeb & Co., New York banking house. Earlier in the case, Pierre S. du Pont had testified that the reason he and other du Pont family members had bought considerable Du Pont common stock in 1915 was that the Allied Powers were afraid that acquisition of Du Pont stock by Kuhn, Loeb & Co. might mean that control of Du Pont was falling into "pro-German" hands. Wiseman confirmed that there had been rumors that Kuhn, Loeb was pro-German, but said he had investigated and found the rumors groundless.

FOREIGN . . . . .

Imports/Greece: The Greek government will allow for the time being the free import of naphthalene, fish-oils and other fats.

•

Acetate/Japan: Directors of the Dainippon Celluloid Co., Osaka, have discussed with Celanese Corp. of America the subject of acetate production in Japan. Dianippon officials indicate that the only snag in negotiations is Celanese's indecision on whether or not to sign a tie-up contract with a single Japanese company or with Japanese acetate makers as a whole.

•

Vinegar/Philippine Islands: Philippine Packing Corp., a California Packing Corp. subsidiary, is planning to build the "world's first" commercial plant to produce vinegar directly from pineapple juice. Its initial step: construction of a 15 gal./day pilot plant at Mindanao.

•

Expansion/West Germany: Difficulty in attracting outside investment capital is the problem described by W. A. Menne (president of the German Federation of the Chemical Industry) as causing the greatest anxiety to German chemical manufacturers. He estimates that almost 90% of the total (2.5 billion DM) spent on new plants and plant extensions since the currency reform have come from the companies' own financial resources.

•

World Trade/West Germany: West Germany has emerged as Britain's number one rival in world markets. Its record: sales equivalent to over $335 million in foreign markets during

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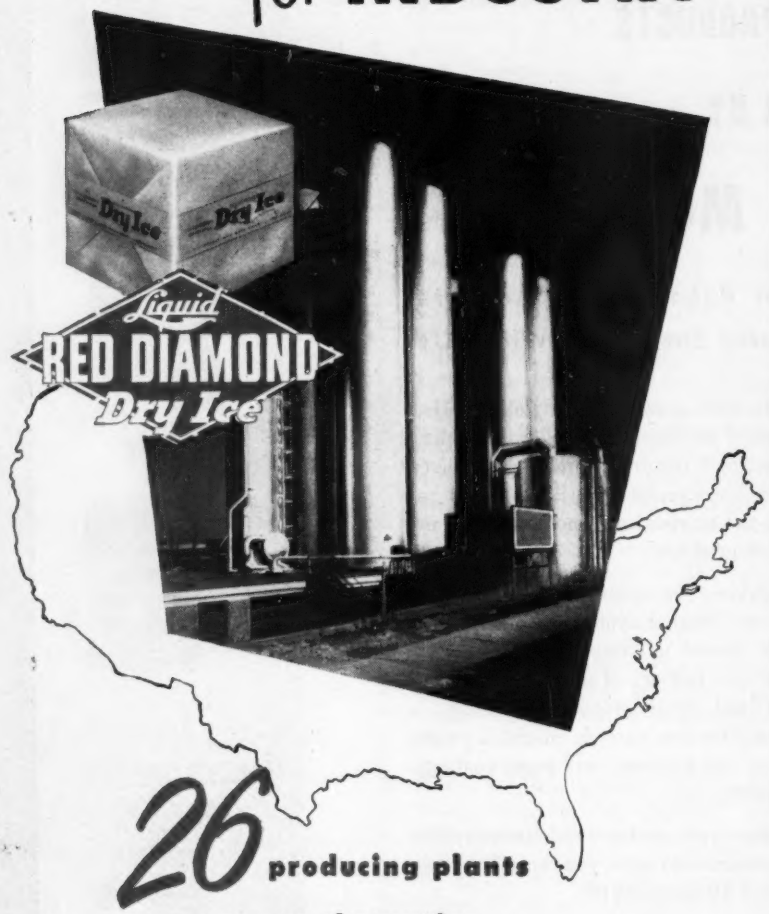
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B & I . . . . . .

1952. Major gains were registered on the European continent and in the Middle East.

•

Pharmaceuticals/Italy: American Home Products Corp., New York, has become a shareholder in Carlo Erba Co., Milan, has purchased capital stock of 200 million lire value for $480,000. No mention has been made of any agreement for technical collaboration.

•

Fertilizer/Puerto Rico: A new company, Corporación Caribana de Abono Orgánicos, San Juan, is conducting negotiations with the Industrial Development Co. to build the first organic fertilizer plant in Puerto Rico. With an estimated annual output of 20,000 tons, the plant will make use of garbage, which will be combined with marsh soil for conversion to organic fertilizer.

•

Minerals/India: The Indian government has extended state control over production and distribution of a wide range of minerals used in development of atomic energy and allied industries. Among those included: radium, zirconium, graphite, lithium, monazite, zircon, beryl, uranium.

KEY CHANGES . . .

Alexander Fleck: To chairman, Imperial Chemical Industries, London, England.

Frederick H. Leonhardt: To chairman of the board, Fritzche Bros., Inc., New York, N.Y.

James Forrestal, John C. Franklin, Francis A. Gibbons: To directors, General Aniline & Film Corp., New York, N.Y.

T. A. Ralph: To board of directors, Smith, Kline & French Laboratories, Philadelphia, Pa.

Ernest G. Kuehn: To vice-president, Heyden Export Corp., Heyden Chemical Corp., New York, N.Y.

H. N. Stephens: To vice-president, Minnesota Mining & Manufacturing Co., St. Paul, Minn.

Paul L. Hershfield: To president, Walsh Refractories Corp., St. Louis, Mo.

KUDOS . . . . . .

John C. Warner: President, Carnegie Institute of Technology, received the Gold Medal Award of the American Institute of Chemists.

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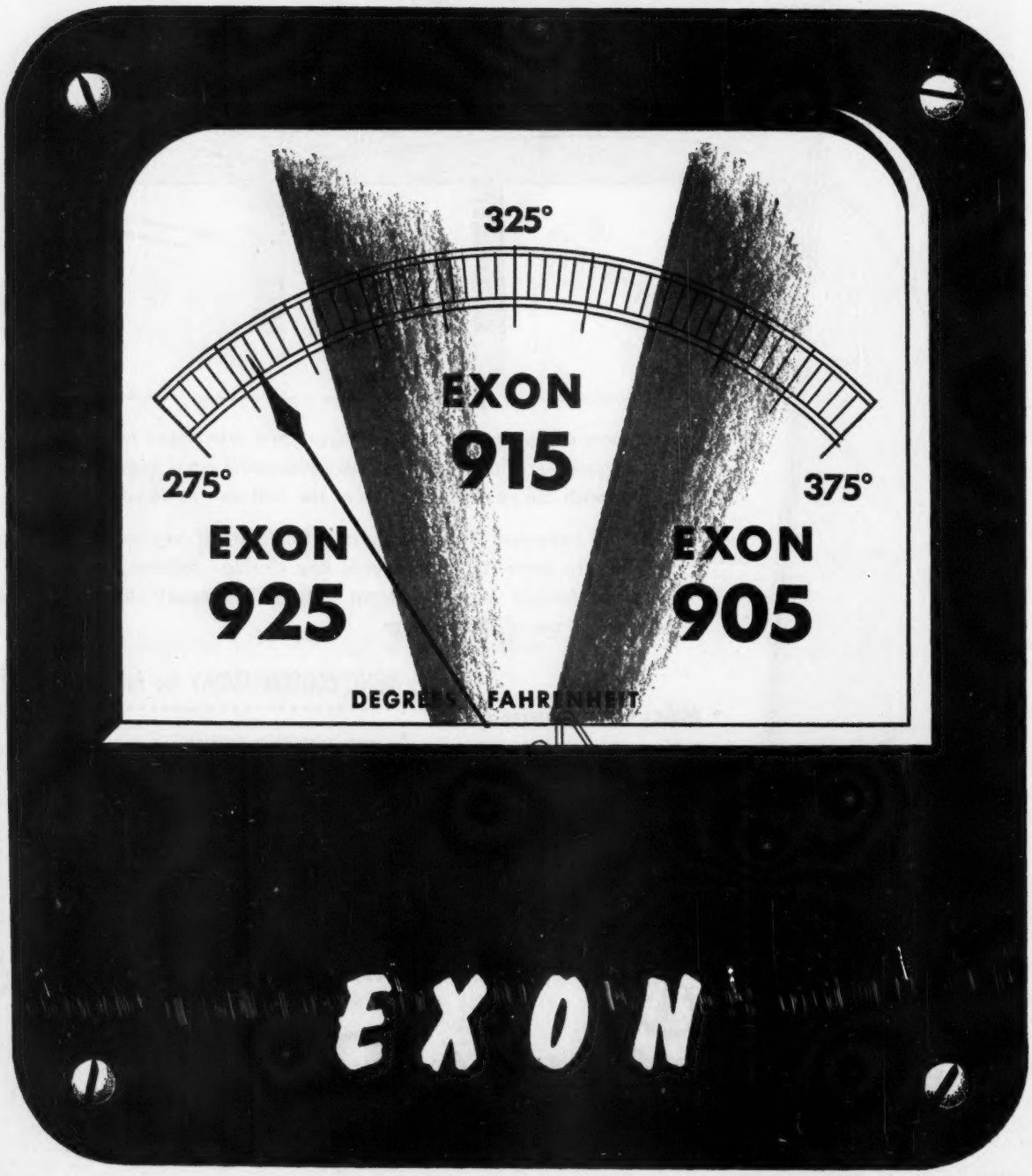
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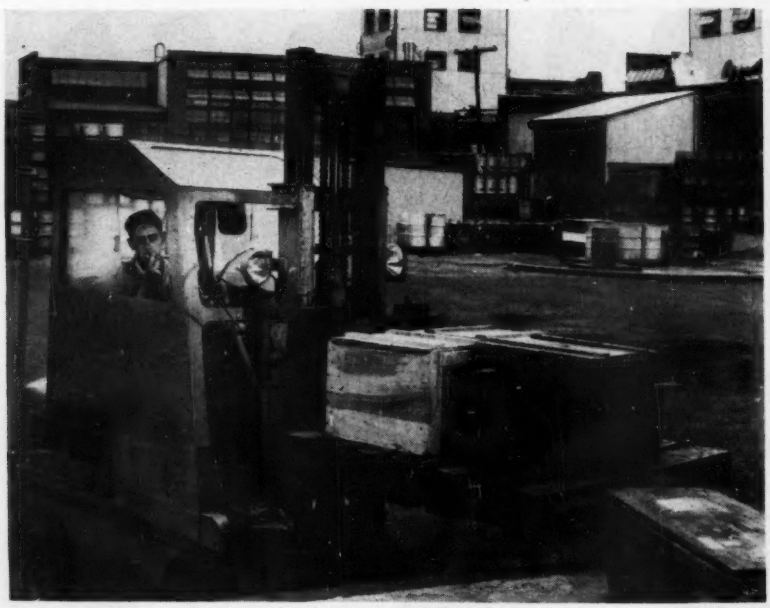
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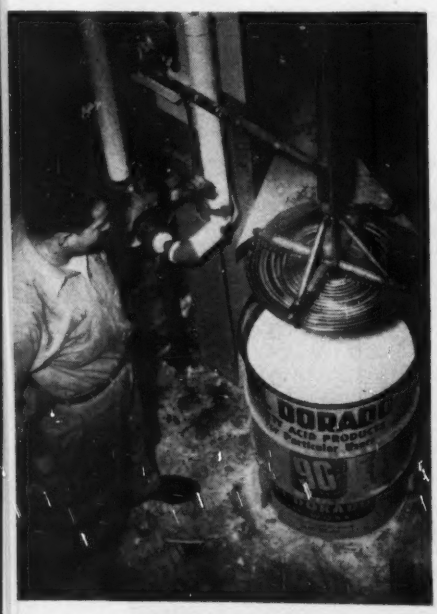
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HOMING FORK TRUCK angles toward loading platform with incoming cargo as Operator Joseph Vitale calls to find outbound pallet and destination . . .



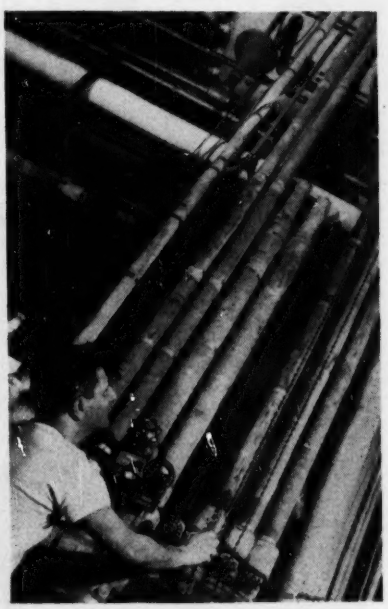
. . . while Foreman John Christian consults and then orders truck back to production with



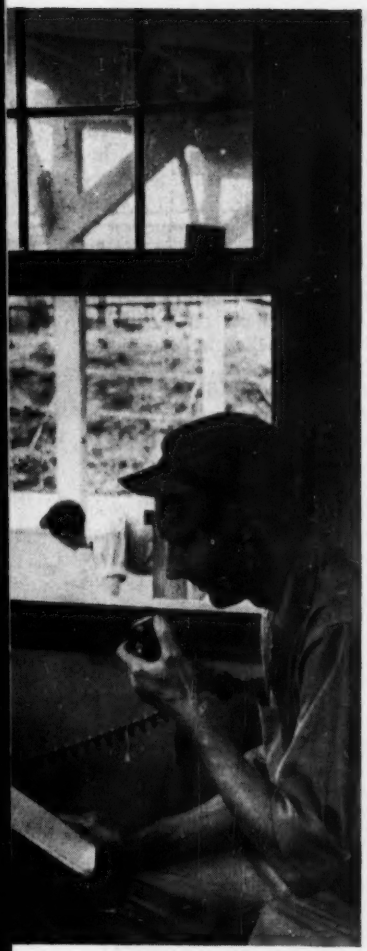
LATER, John Gagliardi lowers steam coil into acid, which moves to hydrogenator ...



. . . where magnetic tray removes the Raney nickel catalyst before acid goes to . . .



. . . reactors and 4-story stills where Tom Paonessa checks centralized controls while . . .



daily order sheet, directs load deposition drums of palmitic acid.

SWAPPING a truck, man and bicycle for a radio might make a Yankee horse-trader snort with disgust. But this novel proposition struck Trubek Laboratories, Inc.'s (E. Rutherford, N.J.) management committee as a pretty fair exchange: a fork lift truck they wouldn't have to buy; a man they wouldn't have to hire; a bicycle their yard foreman would no longer need for chasing down his trucks—all this for a two-way radio system that would operate between truck cabs and the foreman's shack. And that was only the beginning.

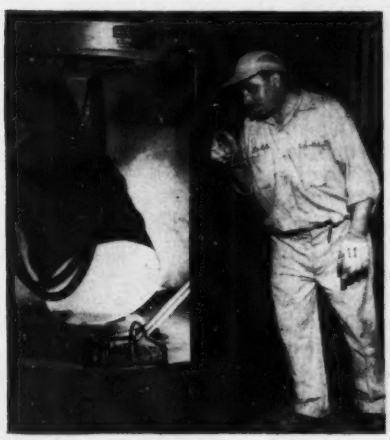
This week, workers at Trubek will tighten the last few bolts on a new automatic drum reconditioner. Meanwhile, others have already begun building an adjacent platform for new paint-spraying equipment. And before the first drum is sprayed, the four-man management committee† will likely come forth with another innovation for upgrading production efficiency and speed. Score so far:

- A two-way radio that cuts intraplant materials handling time 40%.
- A steam coil that liquefies low-melting solids 60 times faster than old-fashioned heated rooms.
- A magnetic Raney nickel catalyst separator that ups catalyst recovery, eliminates filter changes heretofore necessary as a result of contamination, speeds up hydrogenation.
- A centralized control manifold that saves stories of step climbing.
- A drum reconditioner that is figured to halve drum handling time.
- A carboy cleaner that more than triples cleaning capacity.

Techniques like these keep a small, diversified chemical company* from capsizing in the wake of industrial leviathans. Basically, it's a story of fast-moving mechanization.

† Appointed by the president, the committee is composed of a chemist, chemical engineer, accountant and civil engineer. Members pass on appropriations and all management problems lying beyond the scope of any one individual; they also investigate—and sometimes originate—suggested production improvements.

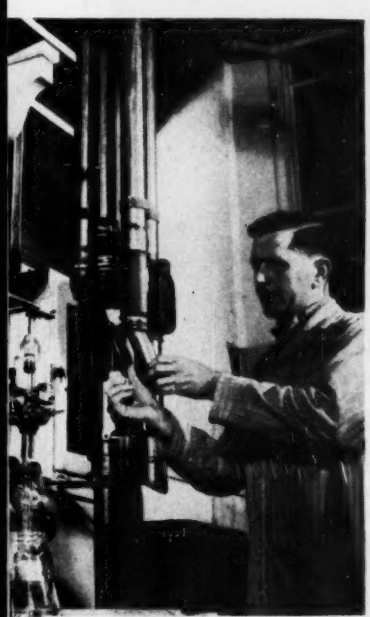
* Staffed by 180 employees, Trubek turns out over 400 organic intermediates in 1-lb. to tank-car quantities.



FINALLY, Aaron Jackson closes drum reconditioner in cleanup operation as . . .



. . . Charles Sarlo removes drum from old-fashioned steam cleaning hoses . . .



. . . samples are sent to lab, checked by Lon Hediger, returned via Lamson tubes.



. . . Joseph Fulvi hand-chips paint until reconditioner reaches its full stride . . .



. . . Bill Harris watches carboy cleaner take over old hand-washing chores.

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Switch in Synthesis

Coke ovens and gas generators may soon be outmoded at its Belle (W.Va.) Works, says Du Pont, as it starts a switch to a new continuous process for making synthesis gas. Reasons for the switch: more efficient conversion of coal and less pollution.

Eight years in the making and representing a research outlay of $1.6 million, the new process has been dubbed the coal-partial-combustion. It has been tried out for two years in a pilot plant, will be installed in a large-scale unit that will cost $4 million (including costs for dismantling some of the existing facilities). If it lives up to expectations, it will eventually replace all the coke ovens and gas generating facilities at Belle.

The decision on the new process takes on added significance in the face of the postwar trend to use natural gas as the starting material for synthesis gas. By sticking to coal, albeit by a new process, Du Pont is running counter to that trend.

Old vs. New: The process that will be replaced is the well-known water-gas method. In it, steam is passed through a bed of incandescent coke at high temperatures to form water gas (almost equal parts carbon monoxide and hydrogen).

In the new process, low-fusion-ash coal can be used instead of the less abundant coking variety. The coal is ground to a fine powder in a micronizer, then fed to a ceramic-lined furnace. There it's burned in the presence of steam and a "deficiency of oxygen" at a carefully controlled temperature.

Product from the furnace is synthesis gas (carbon monoxide and hydrogen). The carbon monoxide can be put to work profitably by Du Pont as a raw material for the production of ethylene glycol since the firm, unlike other oxide producers, makes it by first synthesizing glycolic acid from formaldehyde and carbon monoxide, esterifying it and then hydrogenating the ester.

The synthesis gas will also be used in the manufacture of ammonia and other nitrogen products. It will be treated with steam to form carbon dioxide and another mole of hydrogen. The hydrogen thus formed will react with nitrogen (from an air separation unit) to produce ammonia, which may then be combined with the carbon dioxide to make urea.

The bulk of the ash from the furnace will be removed as slag, and lightweight particles will be caught in filtering equipment. Thus the firm, in addition to getting what it expects, will also get a continuous and more efficient process, will be able to cut down its aerial pollution. It is currently spending $2.3 million on an installation to reduce fly ash from the boiler house. If the new process can completely replace the old, the pollution problem at Belle should be all but eliminated.

Du Pont looks at the process like this: "Our hope is that the unit will live up to research expectations as a way to make the Belle Works clean and to put what is essentially an old plant, as time is now measured in the chemical industry, on a sound competitive foundation for the future."

Switch in Emphasis

On the other side of the fence as well as the other side of the country is Portland (Ore.) Gas & Coke Co. (Gasco). In anticipation of the arrival of natural gas in the Pacific Northwest, it has just started conversion of 4 of its 14 low (570) BTU oil gas generators to high (1,030) BTU production. Gasco's present low-BTU gas cannot be blended with natural gas, but the high-BTU gas can. So whether the natural gas comes from Canada or the Southwest (depending on the outcome of current Federal Power Commission hearings), the firm figures it has a start on the problems raised by the introduction of natural gas to the area.

More important for some of its process industry customers, however, is the fact that the switch to a higher-BTU gas will bring with it an increased output of residual oils and other by-product chemicals. For in making the higher-BTU gas, yields of light oils and other residues are greatly increased and recovery of free carbon is virtually nonexistent. The converted generators will produce about the same number of thermal units per cycle, and though output in terms of weight will be lowered, yield of residual tars will be increased about tenfold.

The importance of these by-products to Gasco can be seen in the firm's annual reports. Their value rose from $937,000 in 1941 to $6,660,000 in

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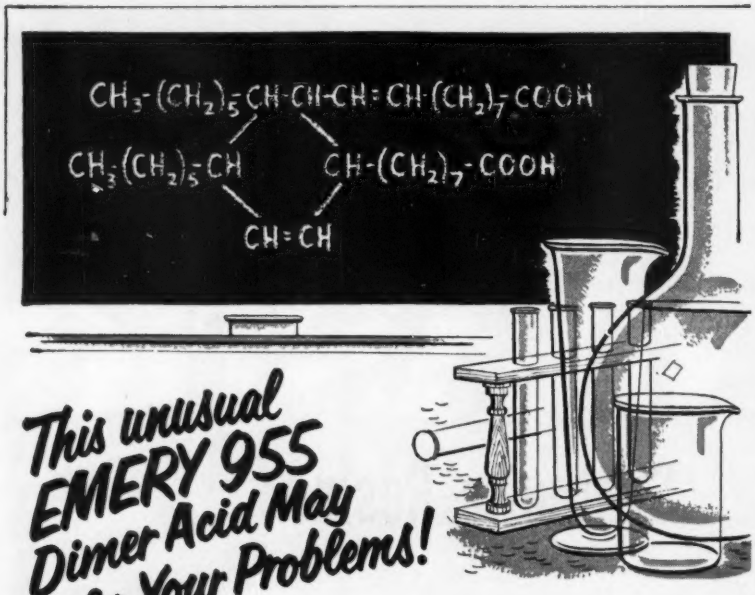
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PRODUCTION . . . . .

1952. During 1952, in fact, roughly a third of all revenue came from the sale of creosotes; soft and hard pitches; road tars and naphthalenes derived from tar; benzene, toluene, xylene and solvent naphtha refined from light oils. Tar product sales were 8,127,586 gal.; light oil, 5,010,206 gal.; carbon products—chiefly briquetted lampblack, 128,604 tons; gas oil, 979,145 gal.

Gasco's progress into by-products was a gradual evolution. It originally started out (in 1860) making coal gas, switched to water gas in 1897. Later (1906), when California petroleum started spewing forth, it converted its equipment to oil gas.

The firm first briquetted lampblack for low-ash fuel in 1913. In 1923, a light-oil recovery and refining plant was built and benzene marketed. Tar was first sold for roadbinders in the early '20s. In 1941, a modified Knowles four-oven, oil-coking installation was built for production of high-grade tar and petroleum coke. High-BTU gas was an important by-product.

Because of the recent decision of the aluminum industry to expand production in the Northwest, the fattest potential market for Gasco's by-products lies in the sale of pitch for potline electrodes. Gasco is presently supplying about 30,000 tons of electrode pitch annually to the region's aluminum mills. Of the five established plants, three obtain all, the others half, of their pitch needs from Gasco.

EQUIPMENT . . . .

Conforming Coat: With what is claimed to be a unique and exclusive process, Pyramid Plastics, Inc. (Chicago) declares it can now apply plastic coating to tube jackets of flexible paper, steel and other metals. The process is said to leave a smooth covering that doesn't reduce flexibility nor penetrate small openings in the coated item.

•

Added Weight: The Exact Weight Scale Co. (Columbus, O.) has just added a new model to its 4200 Shadograph Series. Available in a capacity range from 50 gr. (with a 10-mg. sensitivity) to 1,500 gr. (with a 350-mg. sensitivity), the scale features a new center tower design with weighing pan on one side and counterweight platter on the other.

•

Clicking Counter: May Engineering Co. (North Hollywood, Calif.) is marketing a new device, Mark-N-Count, designed to ease the concentration burden of list checkers. Consisting of

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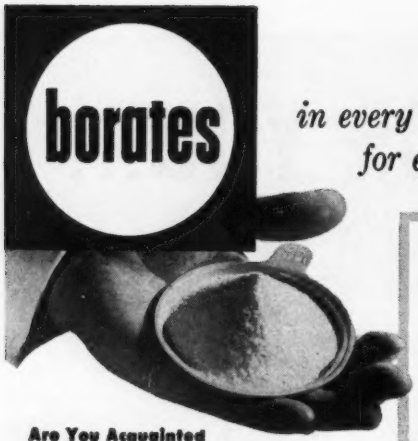




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•

Sensitive Meter: A new Model 262 volt-ohm-milliammeter has just been introduced by Simpson Electric Co. (Chicago). Featuring a sensitivity of 20,000 ohms per volt, dc. (5,000 ohms per volt, ac.), the meter is reported to have a measurement accuracy of 3% dc. (5% ac.) of full-scale deflection. Selling for $68, the meter comes in a 7-in. case, weighs only 4 lbs.

•

Miniature Potentiometers: Waters Manufacturing, Inc. (Waltham, Mass.) has come forth with a new RTS-⅞ series of miniature wire-wound potentiometers. Housed in anodized aluminum bodies, the units weigh 7/16 of an ounce, come singly or grouped as required.

•

PVC Pipe Stock: Alpha Plastics, Inc. (West Orange, N.J.) is now turning out Alpha-Forty, rigid polyvinyl chloride for use in manufacturing plastic pipe, fittings and tubing.

•

More Plugs: Pyle-National Co. (Chicago) is augmenting its line of heavy-duty industrial plugs and receptacles with a new series of explosion-proof connectors. Tradenamed Strate-Line, the plugs and receptacles are designed for portable electrical equipment in hazardous locations.

•

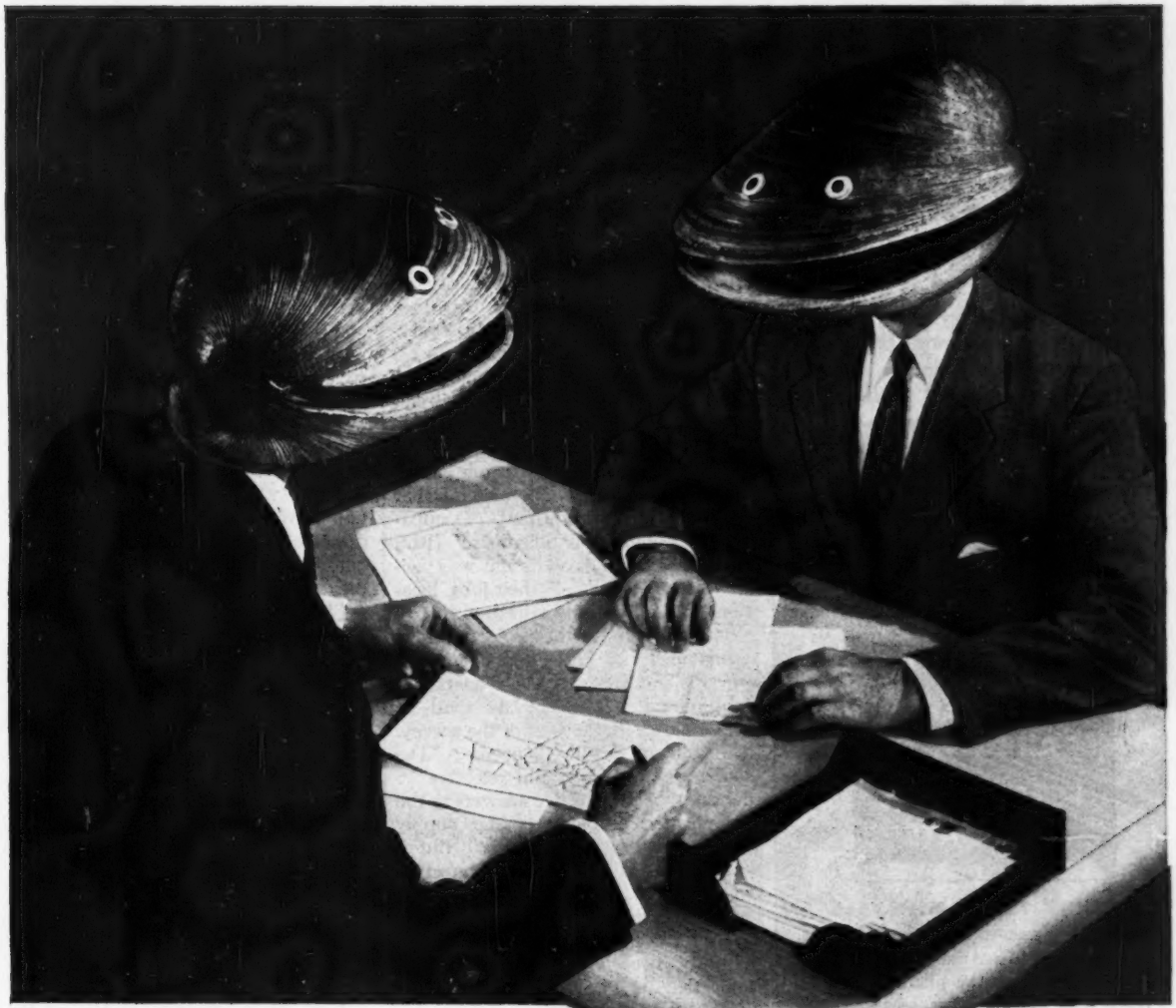
Alloy Wrench: Ampco Metal, Inc. (Milwaukee) has just added a lightweight aluminum alloy pipe wrench to its line of safety tools. Touted as spark resistant, the wrench features removable and interchangeable beryllium-copper jaw inserts.

•

Controlled Control: Claimed to be the first automatically and continuously self-supervised circuit in the alarm field, Scam Corp.'s (Chicago) new industrial alarm automatically signals the operator if the system goes awry due to failure of any of its parts. This self-policing unit is of compact design, can be used for either normally open or normally closed field conditions.

•

Midget Massometer: Measuring only 24½x26x14½ in., Wallace & Tiernan's (Belleville, N.J.) new flowmeter has a 225 lb./minute capacity, and accuracy within 1% at 10 to 100% of capacity. The Massometer measures the mass rate of flow of free-moving solids by determining the torque produced in accelerating the flow.



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Spotlighted: Wanderlust

Faced with the grim prospect of continuing world tension, the nation has become keenly aware that its scientific talent is perhaps its chief weapon in the long-term struggle for security.

Never before has the scientist been the object of so much attention. Everything from his migratory habits to his care and feeding may be found in the mounting fund of reports, surveys and studies. Latest addition to the literature could make highly interesting reading for industrial research executives. It's a 63-page Bureau of Labor Statistics* study entitled "Occupational Mobility of Scientists." (BLS Bull. 1121), deals with the way scientific workers change their jobs, location, and field of specialization.

Guinea pigs for the project were a group of 1,122 Ph.D.'s in chemistry, physics and biology; each science is represented by 5% of its total of Ph.D.'s in 1948, the year of the survey. The bureau readily concedes: "The sample is both small and selective . . . does not yield definitive answers to the complicated problems of . . . supply and recruitment of scientists." But it does give rise to a raft of interesting statistics, a handful of potentially valuable deductions.

Under the heading of "geographic mobility," for example, the bureau finds that its Ph.D.'s are "even more mobile than the average professional man." More than 80% have moved across state lines at least once in the course of their careers, more than 40% have worked in three or more states. "Apparently," surmises the report, "for a scientist, the nature of the job and the salary it offers will usually outweigh the . . . disadvantages of its location."

On the strength of a good deal more corroborative data it concludes:

> **Geographic location need not be a limiting factor in planning research and development programs, at least with reference to the recruitment of scientists (particularly Ph.D.'s).**

The situation with respect to mobility of specialization is far different. The scientist seems to shed his wanderlust at the laboratory door. Most, in the bureau survey, had developed the interest that was to shape their lives by the time they were juniors in college. And about one out of every two continues to work throughout the greater part of his professional life in the same specific field in which he started.

Exceptions, however, are conspicuous. Early occupational experience, in particular, is likely to be considerably far afield from a scientist's eventual area of specialization. Moreover, this situation applies with special emphasis to recent graduates. Reports the survey: ". . . a relatively high proportion (16%) of the first jobs held by these scientists were in entirely different disciplines from those in which they later specialized."

[The bureau uses "general field of specialization" or "discipline" to connote a broad science (e.g., chemistry, physics, biology); "specific fields" refer to subdivisions (e.g., organic chemistry, bacteriology, etc.).]

Experience in more than one discipline is by no means always the result of first job adjustments. On the contrary, the bureau notes "a tendency for an increasing number of scientists to gain experience in a second discipline with a longer stay in the labor market." In simple language this means that, in general, the older the individual, the greater likelihood he will have worked in more than one science. This contention is backed by figures that show that 35% of scientists in the oldest age group (the men who have held at least four jobs) have experience in more than one general field, while only 10% of the youngest group have a similar record.

For the most part, interdiscipline shifts are far less common than shifts within a general field. Only 16% of chemists surveyed, for example, have worked outside chemistry, but 42% have experience in two or more branches of the science. Those who do make the big switch, either as students or working scientists, are apparently influenced to some degree by increasing demand for personnel trained in their adopted science. With the recent growing need for physicists, the report discerns a "greater tendency for scientists to shift into physics than into either chemistry or biology."

Because of its selectivity, the sample group does not give a representative picture of over-all occupational mobility. For practical reasons, the most mobile individuals were excluded. The survey cites the case of a Ph.D. in

* In cooperation with the Dept. of Defense.

chemistry who never worked as a chemist, but pursued a career as a concert pianist. The bureau readily concedes: "A study of all people receiving Ph.D.'s in the sciences would show a higher degree of . . . mobility."

Broad conclusion:

The personnel supply in a particular branch of chemistry or biology may be substantially augmented through transfers from other branches of these general fields. But no sizable number of persons can be expected to shift from one science to another.

A third kind of mobility, functional mobility, bulks large in the study. At the time of the survey, more than half the biologists and physicists were employed as college teachers. But research was the predominant activity of the chemists; close to two-thirds were doing research or directing research in administrative capacities.

Moreover, it was found that Ph.D.'s normally boast a fairly broad range of functional experience, characteristically move from one type of activity to another. Four out of every five scientists in the sample have performed at least two functions (research, administration, teaching, etc.). Three out of every five men who have held four jobs during their careers have worked in at least three different kinds of activities. Even three out of five of the two-job men switched functions with the second job.

Functional breakdown at the time of the survey: 38% of all the Ph.D.'s were college teachers; 30% were doing research; 21% were in technical administration; and 11% were in a variety of different functions. These figures, however, give no clue to the potential labor supply in any of the functions. Cautions the bureau: "Since most Ph.D. scientists have had widely varied experience in the activities normally carried out by scientists—teaching, research, technical administration, etc.—the number engaged in a particular type of activity at any specific time is no indication of the number qualified to carry on this type of work."

The timely conclusion:

"Above all, many more Ph.D.'s have had experience in research than are actually employed in this kind of work at any given time."

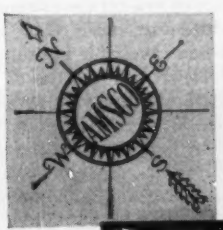
What type of employer is most popular with scientists? On the basis of survey results, it would seem that the

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university is way out in front. The bureau's figures "indicate that more than two-thirds of the scientists who left the government, private industry, or a foundation for another type of employment entered educational institutions."

That universities are able to compete successfully in attracting and retaining scientists is considered noteworthy in view of the relatively low salaries they offer. It's not hard to understand the appeal of university employment. But the bureau spots another factor, states that "the extent of mobility and its direction is . . . as much a matter of economic opportunity as of personal preference." The plain fact is that the decision to remain in academic work, in many cases, reflects nothing more than the lack of an alternative opportunity. Chemists, for example, who are more widely used in industry than other scientists, leave the universities at a much greater rate than biologists or physicists.

A pilot study, the newly published report leaves many questions unanswered. It won't solve our technical manpower problems; but its observations and conclusions could be an important part of the foundation for intelligent national policy in this critical field.

Ready for the Payoff

It hasn't been said in so many words, but to those in the know it has become increasingly clear that acetylene chemicals have crossed the threshold of commercial maturity. In testimony to this fact are a flock of new acetylene derivatives, a score of recent production boosts among the older ones. This week, General Aniline Works' (Div. of General Aniline and Film Corp.) director of commercial development, Jesse Werner, made it official, told CW: "The important thing that has happened to our development is that it has left the exploratory stage, is now definitely in the pre-commercial stage."

For General Aniline's acetylene people, this is the second turning point in their decade-long effort to put acetylene chemicals on the commercial map.

The first major break came five years ago with the opening of GAF's Grasselli, N.J., pilot plant. Prior to that time, acetylene derivatives were strictly for the research laboratory; they were difficult, often dangerous to synthesize and no one had a profitable use for them anyway. The pilot plant started the growth process in earnest, sparked the initiation of a systematic program of market development.

A dozen or more GAF acetylene derivatives—available in drum and carload lots—are a fair gage of the venture's success. Included in this group are such relatively familiar materials as butanediol, butynediol, polyvinyl methyl ether, methyl vinyl ether-maleic anhydride copolymer (PVM/MA), the four vinyl ethers (methyl, ethyl, n-butyl and isobutyl); and neophytes like propargyl alcohol and bromide (intermediates), butyrolactone (intermediate and selective solvent) and polyvinyl isobutyl ether (tackfier and adhesive).

No sensational discovery or revolutionary chemical development underlies the newest step forward. Rather, it's the result of a continuous effort to widen the scope of research, increase pilot-plant know-how, get a clear idea of the potentialities of the many possible products. GAF's Werner puts it this way: "Our former aim was to establish whether the chemicals made available from high-pressure acetylene reactions have a practical commercial place. . . . We believe that our previous work has answered that question in the affirmative and our new aim is to bring about large-scale production and utilization of these products."

But that's hardly the whole story. Along with the push for volume production and big outlets, there will be as much activity as ever in GAF's Easton, Pa., laboratories. New products are the targets and, by the look



GAW'S WERNER: For a high-pressure question, an affirmative answer.

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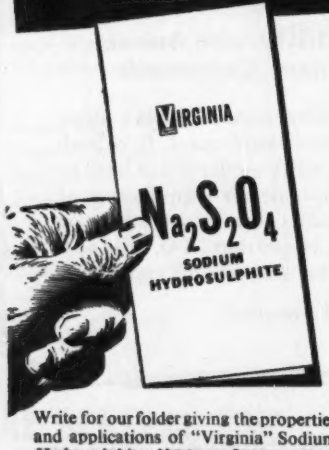
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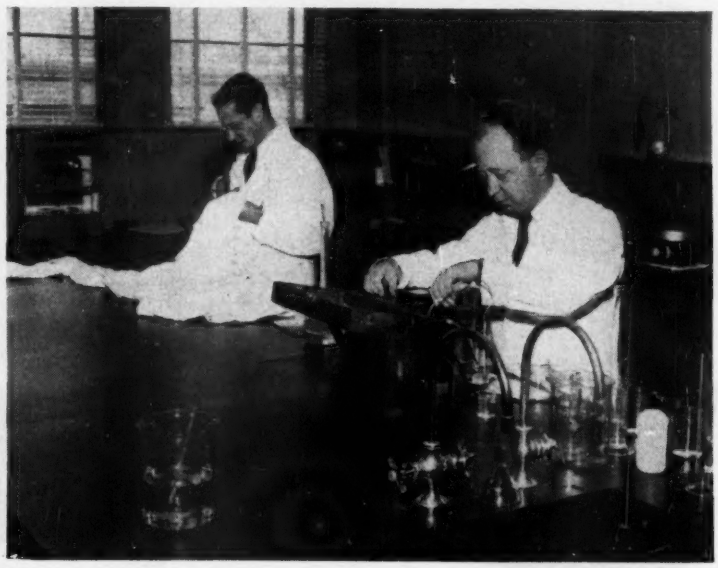
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Laundry Chemists on the Spot

FIRST CONCERN of laundry and textile chemists at Wyandotte Chemicals Corp.'s new research laboratories is the development of new and improved detergents, bleaches, sours, scouring agents, etc. But they're always on call for a job of trouble-shooting. The company maintains a service of direct technical assistance to commercial laundries, will determine the cause of damage to articles submitted. Here, a damaged sheet is undergoing tests to decide whether the cause was mistreatment during laundering or a mishap prior to being received at the laundry. Newly dedicated, the two-story, T-shaped Wyandotte laboratories building now houses the company's entire extensive and diversified research activities, was two years abuilding.

of things, researchers haven't lost their aim.

Look for GAF to unveil these new acetylene chemicals in the next few months:

- 1,2,4-Butanetriol, a high-boiling liquid suggested for use as a solvent, humectant and intermediate in explosives and pharmaceutical manufacture.
- N-Methyl-2-pyrrolidone, a liquid material that is promising as an intermediate and selective solvent for spinning synthetic fibers, etc.
- N-Vinyl-2-pyrrolidone, a liquid with monomer possibilities.
- PVM/MA (as the ammonium salt of the half amide), a white amorphous powder suggested for use as an adhesive and textile-size thickening agent.
- Polymethoxy acetals, liquid intermediates that also show promise as phenolic resin modifiers.
- Malonaldehyde tetraethyl (or methyl) acetal, a liquid with potential as an intermediate.
- Cycloöctatetraene, an eight-membered, quadruply unsaturated hydrocarbon ring with a spate of interesting possibilities as a chemical intermediate.

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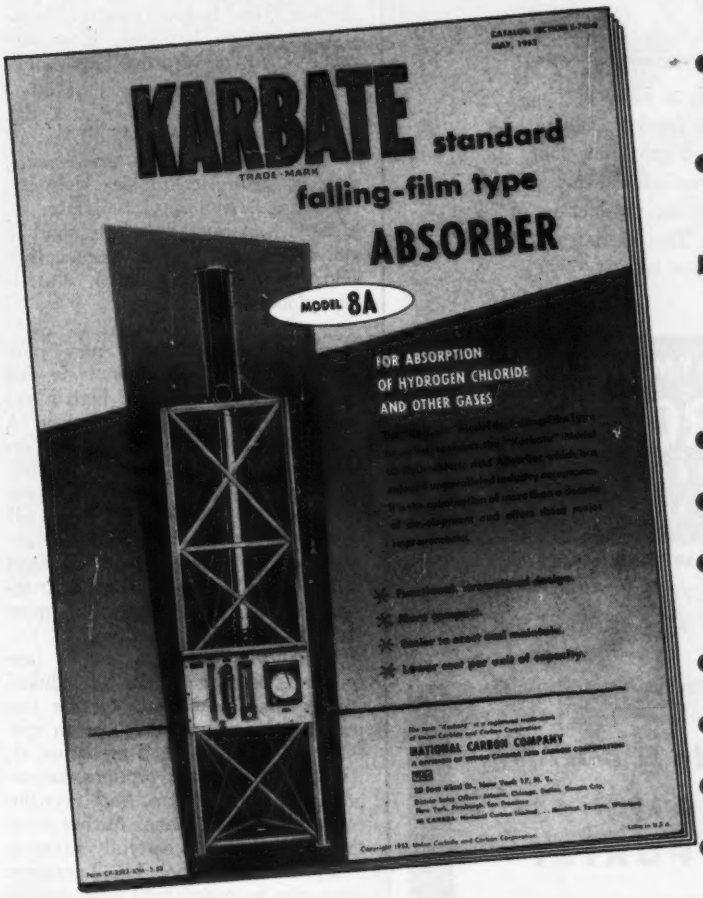
Debut: Bowing in this week on the new-products scene were:

- N-phenylmaleamic acid, in trial-lot quantities from American Cyanamid Co. A yellow crystalline material, the compound has possibilities in the preparation of fiber-forming resins, as an intermediate in the synthesis of insecticides. It's all in a new Cyanamid technical bulletin.
- 2,5-Diphenyloxazole, in pilot-plant quantities from Arapahoe Chemicals, Inc. (Boulder, Colo.). It's used in liquid scintillation counters, is more soluble at low temperatures than most other scintillants for liquid counters. In practice, the compound is dissolved in toluene to form a scintillation medium in which an entire radioactive sample may be immersed.
- Trimethylol ethane, in commercial quantities from Heyden Chemical Corp. A new trihydric alcohol, TME —according to Heyden—"will make

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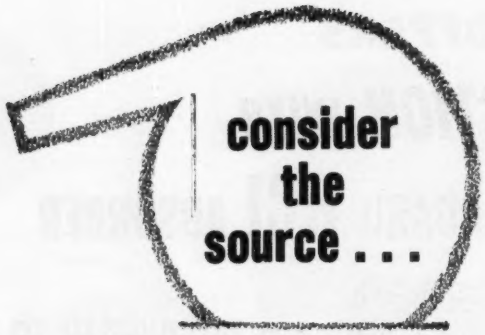
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RESEARCH . . . . .

possible new kinds of alkyd resins and improvements in existing types of surface coatings." For Heyden, TME is a logical follow-up on pentaerythritol. But, ventures the company, it won't cut into the latter's applications: TME is reported to have special importance in alkyd resin formulations where viscosity and handling properties are major factors; pentaerythritol is used where hardness, gloss and rapid drying are of prime importance.

• Nine additions to Distillation Products Industries' (Eastman Kodak Co.) line of more than 3,500 fine organic chemicals. The newcomers: α-chloro-N-ethylacetanilide; dehydrocholic acid; di-n-butyl fumarate; diisobutyl fumarate; di-isobutyl phthalate; α,α'-dichloro-*p*-xylene; isonicotinic acid; L-menthol (synthetic); and 1-phenyldodecane.

•

Pressure Dropper: Two new pure alkaloids of *Veratrum album* bode well for millions afflicted with high blood pressure. They're protoveratrines A and B, the active ingredients of Veralba—Pitman-Moore Co.'s newest antihypertension drug. The drug is not yet generally available. But in an advance report the Indianapolis pharmaceutical firm claims that it "promises to be one of the most effective drugs yet available for . . . controlling most forms of high blood pressure."

Pitman-Moore's high hopes are founded on the results of clinical studies that show that Veralba can produce a dramatic decrease in systolic and diastolic blood pressures, alleviate unpleasant symptoms associated with hypertension. And, says the company, "investigations further show that when dosage is carefully adjusted to a patient's tolerance, blood pressure often can be maintained near normal levels indefinitely."

Controlled dosage is the key to the new drug's therapeutic value. The range between adequate dosage and overdosage can be very narrow; and to complicate matters, standardization of dosage has never been achieved to everyone's satisfaction during the 70 years that the veratrum alkaloids have found use in treating hypertension. Now the problem has been solved, reports Pitman-Moore, by an original technique of chemical assay devised by company researchers.

•

Fungus Fighter: On the strength of research at Best Foods Laboratories (Bayonne, N.J.), sorbic acid could be a strong contender for benzoic acid's role as a fungistat in foodstuffs. Sorbic's chief advantage: increased water solubility.

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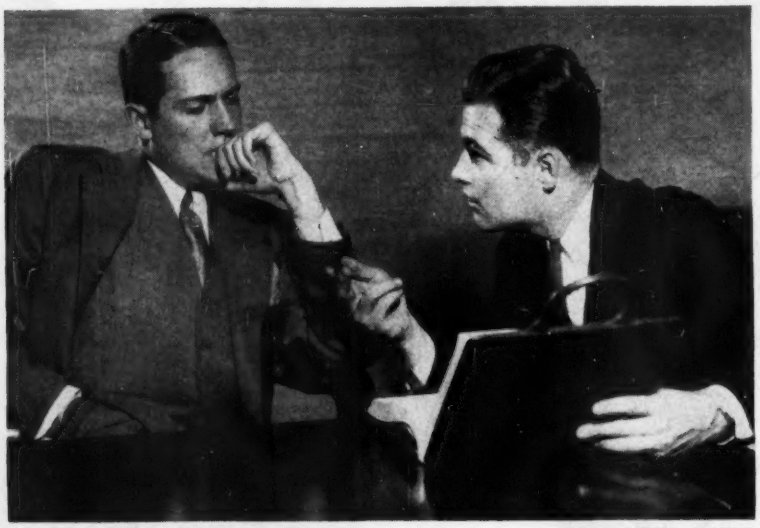
DISTRIBUTION...

More Salesmen, More Sizzle

Chemical companies are gearing up—and fast—for the tough selling ahead; they're hiring more and more salesmen, getting set to deep-plow territories.

Competition, sales managers admit, isn't returning; it's already here—and with it a flock of old worries.

Price-cutting is one problem poser; another: getting buyer-spoiled salesmen to get out and hustle.



EWING GALLOWAY

CHEMICAL SALESMAN: "Neophytes of the '50s will have to learn—fast."

Sales managers are pathological optimists. There are few sales problems, they always contend, that can't be licked by the old fight-team-fight hustle. But right now a good many chemical sales execs have their bouncy optimism tinged with a few worries. Business is good—startlingly good; but competition is getting rough and tough, and it's painfully sure that it's going to get rougher and tougher.

That's the consensus of what several dozen sales managers told CW interviewers this week. They all have their major or minor regional problems, but, nationwide, they fret about moving the mounting output of more and bigger plants; they chafe under the bogey of price-cutting; they are really worried about the never-fought-a-battle inexperience of their sales teams.

Are They Salesmen? "I just don't know whether I have salesmen or not," one sales director said. "My men are all nice young fellows—but the world is full of nice young chaps. I'm far from sure that my men can really sell. A couple of spells of chemicals under allocation hasn't done them any good. They've been order-takers; now I need hard-hitting order-getters."

The same refrain, the same apprehension is echoed north, south, east and west:

"Our salesmen are all under 35 years old. They've had no experience in really tough selling, they're too young to know anything about hard times. We have a problem to teach them to get out and sell."

"Most of our men have come to us since 1941. They've never seen real competition, they'll need a lot of jacking up. I expect many of them will have to be dropped because they won't make the grade."

"We've had to boost the required number of calls per day to get our men attuned to the new climate."

"We haven't one man with the pre-war stuff. The newer ones worry us. Perhaps some will come through, but a lot will fall by the wayside."

Needling to Action: But sales managers aren't just cocking a casual eye at the future or placidly sizing up their problems. They're acting—now—to get their men geared up to snare business. The double-barrel tactics they are employing: reactivating and re-training their men, scouring the woods for additional salesmen or sales trainees.

One company, for instance, has recently—and reluctantly—installed a quota system. ("It's working sales-wise, but what a raft of headaches go with it!")

Others "woke up" sales staffs last year with "revitalizing" programs, told the men to get out and work harder, longer hours. Several companies are cutting down individual sales areas to increase specialization in the products sold by individual salesmen. ("When worms are scarce you have to scratch harder.")

But lining up new men of high sales caliber isn't easy—it's a perplexing, brow-furrowing chore—that's what sales execs are facing up to. Production, they say, is "stealing a lot of engineers" and, at any time, it's tough to find the dual man—technically trained and with sales savvy. So, although top preference still goes to men with technical know-how, a lot of concerns are recasting their specifications and searching out real hustle-bustle salesmen—"the guys who can land orders."

Selling with Sizzle: Perhaps one sales strategist summed it up neatly when he said: "Later this year and certainly by mid-1954 the production men will be crowding us to move their output. Selling will be a tough proposition, then. Already everyone's diversifying, everyone's scrabbling for more business—and a good many outfits are cutting prices. That's the easy way to get orders—and to go broke.

"I'm worried, sure. But we're going to beef up our selling, put a lot more sizzle into our salesmen. There's no reason to be pessimistic just because we have to go back to working for a living."

Selling Against Deceit: Manpower is the pervading problem, but there are other now-brewing headaches. Some companies are bluntly shading quality to beat competition, e. g., single-grinding insecticide blends. Customers, too, are making products poorer to sell a little cheaper. ("Some plastic garden hose is a disgrace.")

In some regions reputable companies are making under-the-table price concessions—selling truckloads at carload prices, absorbing freight costs, issuing credits for hypothetically returned drums.

All this today's salesmen has to cope with. Said one Midwestern sales manager: "The veterans of the '30s knew the ropes; the neophytes of the '50s will have to learn 'em—fast."



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ESSO'S UNIFLO MOTOR OIL—a new concept in lubrication—changes so little in viscosity that it meets four SAE classifications, functions efficiently at extremely low and high temperatures, and helps keep automotive engines at top performance.

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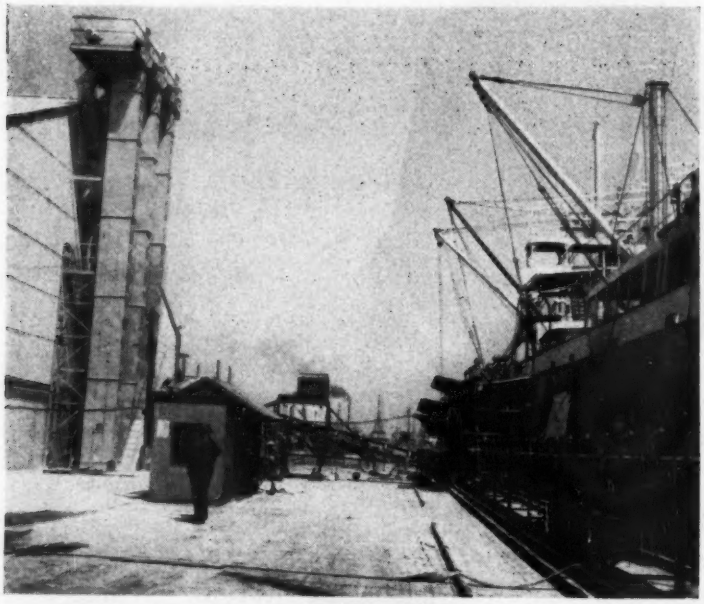
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Play safe with every drum shipment by specifying "Tri-Sure Closures" on every drum order.

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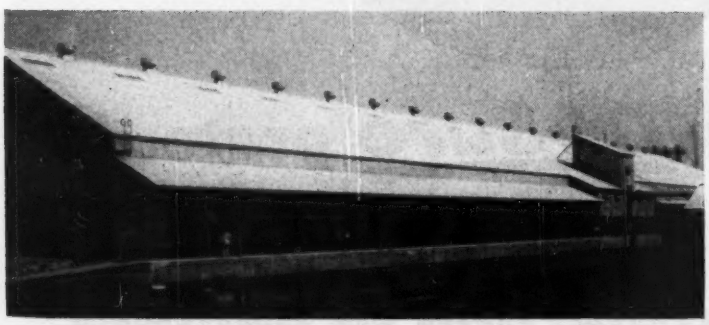
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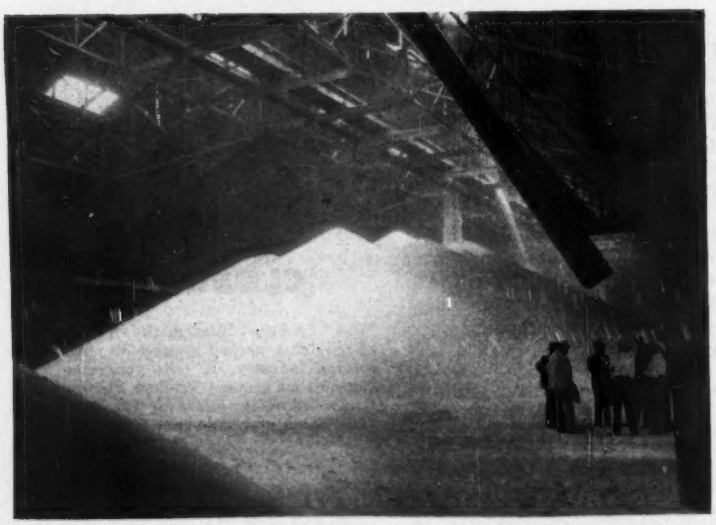


UNLOADED at a rate of 250 tons/hour, Chilean nitrate is conveyed to the . . .

Untouched by Hands



WAREHOUSE, where 150 tons/hour—or 40 carloads/day—is bagged. The . . .



SURPLUS—up to 60,000 tons—is stored in the warehouse for later handling.

DISTRIBUTION . . . .

NOBODY EATS Chilean nitrate of soda, so the "untouched by human hands" pitch has no sanitary connotations; but to the Central of Georgia Railway it does mean slick, economical handling. The railroad line has just put into operation a fully mechanized warehouse at Savannah, Ga., to unload and bag the material.

Replacing an old building destroyed by fire, the new steel and concrete warehouse* doesn't have a stick of wood or other flammable material in it. But the real news is in the handling equipment, which can unload cargo at a rate of 500 to 600 tons/hour. Ships are unloaded with their own tackle and clamshells from five or six hatches at a time. The nitrate is dumped into six hoppers on rails, moves by belt across an automatic scale, and is carried either to the bagging equipment or storage.

The bagging equipment was installed by Smith & Kelly Co., agents for Chilean Nitrate Sales Corp. This firm cooperates with Central of Georgia in operating the warehouse.

Five-ply kraft bags are fed via belt conveyor to the four bagging machines, which fill 50 bags/minute—150 tons/hour of nitrate. The unclosed bags, still moving on a conveyor, are machine-sewn during transit to the car-loading deck, where 40 cars/day can be handled.

When a ship is not being unloaded, the bagging machines are supplied from storage piles in the warehouse, which has a capacity of 60,000 tons. Incidentally, the supply of bags is controlled by one operator, who can shift them back into a smaller storage warehouse by reversible push-button control if for any reason the operation has to be interrupted.

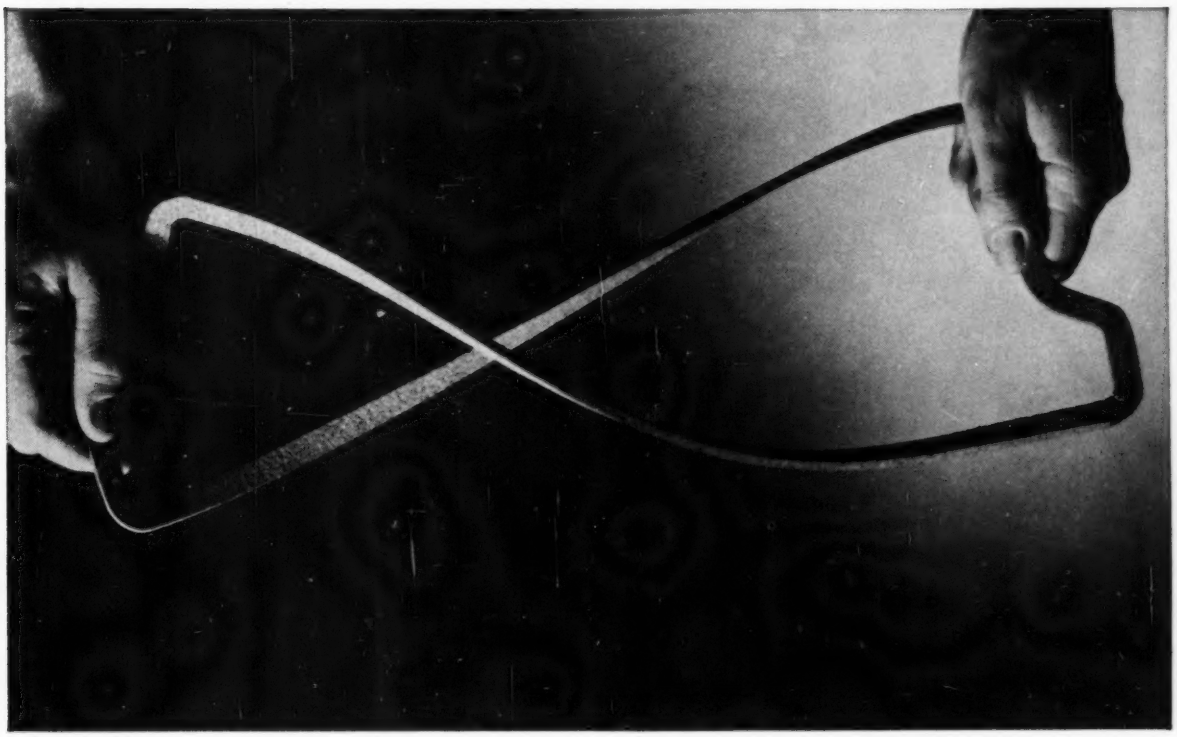
The twin keys to the whole setup, in fact, are control and flexibility. Most of the conveyors, for example, are mounted high in the air, so that traffic can move freely underneath; and the rail-mounted or rubber-tired unloading and loading equipment can be readily moved to match the ship's hatches or boxcar's doors. And a flick of a switch can stop or start any step in the train of operations.

How does Central of Georgia and Smith & Kelly profit? Now 27 men can do what 60 men did before, and the speedy movement from ship to railroad car cuts the cost of unprofitable inventories. Besides, the neat layout has attracted visitors from other ports, who have come to see and learn.

* But some Central of Georgia buildings are older. Executives are proud to be working in buildings used by Gen. Sherman's men during the occupation of Savannah.

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Check every one of the seven Baker features. See which ones may help your company—then ask for samples and prices.

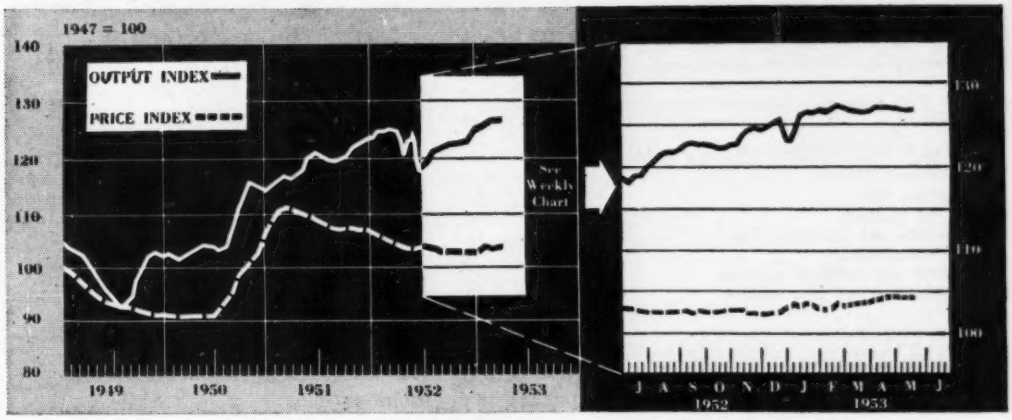
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CW Index of Chemical Output—Basis: Total Man Hours Worked in Selected Chemical Industries
CW Price Index—Basis: Weekly Prices of Sixteen Selected Chemicals

MARKET LETTER

A host of chemical buyers and sellers paused long enough last week to cast a quick glance backward at the past, swung around, took a long hard look at the future and answered a pertinent CW question: "How's business with you?"

The answers, though somewhat at variance on specific points, show a surprising similarity on the broader aspects.

For instance, chemical sales in the current quarter are running well ahead of the second quarter last year—for some companies, as much as 20-25% better.

By this week, however, the brisk-trotting tempo of business activity is showing some signs of a slight slow-up. This may indicate a softer third quarter, but the consensus is "no nose dive in view."

There's no clear design in the crazy-quilt price pattern. Some producers are still able to up schedules to get above the "profitless" exceilings, and to pass along increased freight tariffs. But on longish commodities, and in some sections of the country, there's plenty of sharp trading, particularly among jobbers and resellers scrambling for diminishing open-market business—due, of course, to inventory caution on the part of purchasers, sluggish supplies in producers' warehouses.

In not a few cases a more-than-ample supply has Eastern producers shipping surpluses to the West Coast, selling there at little or no profit—to the accompanying wails of Western chemical companies. The latter decry the tactics, scream "dumping."

The smoldering East-West rippet—seldom brought out in the open—is behind the "Buy Western" campaign inaugurated by many California, other Coast chemical makers.

A "Buy More" hope is behind Shell Chemical's price-slashing of three of its insecticides. The new prices effective immediately: aldrin, (60%), down from 64½¢ to 53.8¢/lb.; dieldrin (tech. flakes), 20¢/lb. cheaper at $1.80; dieldrin (20% solution) now $3.42/gal. from $3.75. All prices are in carload lots, drums.

The pesticides market, generally speaking, is in a tough way.

WEEKLY BUSINESS INDICATORS	Latest Week	Preceding Week	Year Ago
CHEMICAL WEEK Output Index (1947=100)	126.6	126.8	121.4
CHEMICAL WEEK Wholesale Price Index (1947=100)	104.4	104.4	103.4
Bituminous Coal Production (daily average, 1,000 tons)	1,500.0	1,521.0	1,492.0
Steel Ingot Production (1,000 tons)	2,262.0(est.)	2,262.0(act.)	
Stock Price Index of 13 Chemical Companies(Standard & Poor's Corp.)	248.4	253.2	237.6

MONTHLY INDICATORS—Foreign Trade (Million Dollars)	EXPORTS Latest Month	EXPORTS Preceding Month	EXPORTS Year Ago	IMPORTS Latest Month	IMPORTS Preceding Month	IMPORTS Year Ago
Chemicals, total	66.6	56.3	80.9	32.4	24.5	23.7
Coal tar products	4.7	3.8	5.3	4.9	3.9	4.3
Medicinals and pharmaceuticals	17.7	14.3	22.2	0.4	0.5	0.3
Industrial chemicals	9.6	8.5	13.1	7.6	4.9	5.8
Fertilizer and fertilizer materials	2.7	2.5	3.2	16.5	14.2	12.4
Vegetable Oils and fats, inedible	2.2	1.8	7.1	6.8	5.9	7.0

Formulators, particularly, are bemoaning these doldrum-contributing factors that add up to slim profit-margin operations:

- Pest infestations are slightly above average this year.
- Insecticide sales are not strong enough to bolster a market glutted with overproduction in some items.

A few desperate producers are taking short-cuts to save money. For example, trying to grind all ingredients of their formulations at once. While the practice does eliminate the mixing step, quality is sacrificed via reduced particle size control. (Some ingredients grind harder than others.)

Unless business gets better, the only other alternative to shaving production costs, is to shave prices. That's what's going on here and there—directly or surreptitiously.

Better business may be an influencing factor in inched-up chemical prices, but higher labor, freight, other manufacturing costs play the predominant role.

Among the items boosted late last week is carbon tetrachloride. Westvaco Chemical has posted new schedules for its technical, pure and fire extinguisher grades to take effect the first of next month. Typical new tags: for technical, 8¼¢/lb. in tank cars for "Zone 1 delivery; l.c.l., drums to distributors, 11¢/lb. The same 11¢ tag applies to chemically pure tet to resellers in c.l., drums; and 12½¢/lb. in l.c.l.

Carbon tet-based fire extinguisher fluids will go at 10¢ and 11¼¢/lb., c.l., drums, respectively.

July 1 is also the date set by Solvay Process for Advances in prices of its dry caustic soda. Contract customers will then be paying 35¢/100 lb. more for the solid, flake, ground and powdered materials. Here are some of the new prices: for solid caustic (in 700-lb. drums), $3.70; flake (400-lb. containers), $3.75. The ground and powdered caustic will sell for $4.10 in 450-lb. drums. All prices are per 100 lbs., in carload, f.o.b., plant.

At the moment other makers are kicking around the idea of following Solvay's suit. Though it's pretty much a foregone conclusion that most will go along with the hikes—all have the same higher costs problem, there is a slim possibility some may hesitate, put off the increases to a later date.

SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending June 2, 1953

UP

	Change	New Price		Change	New Price
Trichlorobenzene, drms., c.l., wks., frt., alld.	$ .02	$ .145	Monocalcium phosphate, anhydrous, f.o.b. plant, lots of 100 bags or more, per 100 lb.	.15	8.45
Nitric acid, 36° Be., cbys., c.l. wks. per 100 lb.	.25	5.25	Potassium bichromate, bags, c.l. wrks.	.005	.15

All prices per pound unless quantity is stated.



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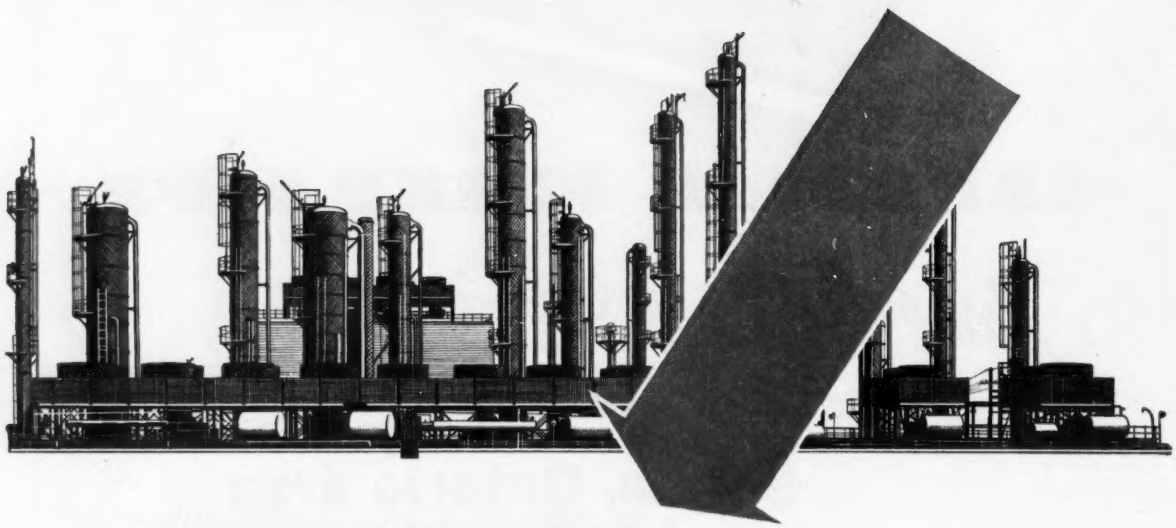


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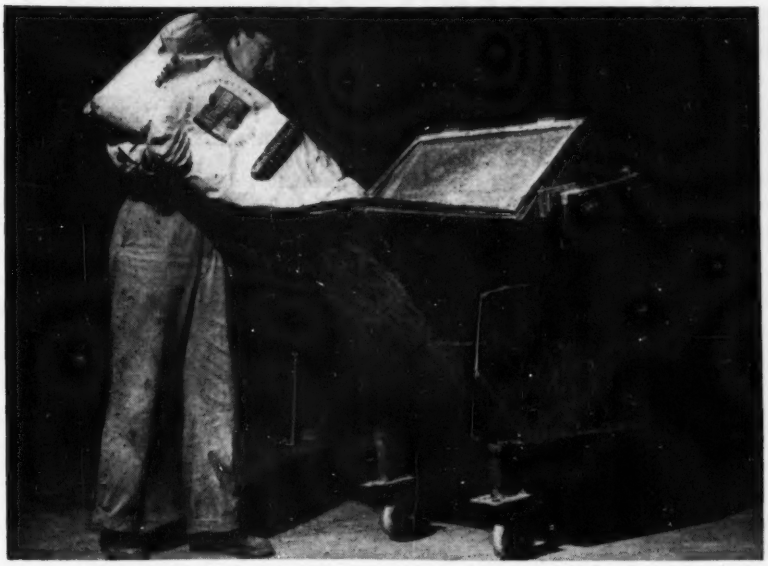
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LOADING STP: Added by the sackful, a little goes a long way.

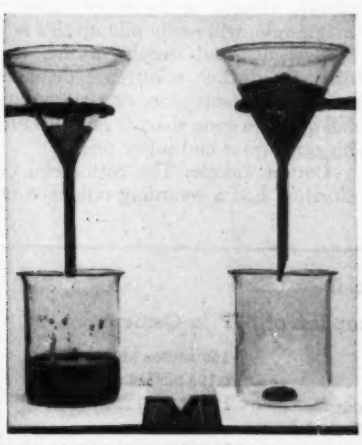
In A Pinch—Use STP

Cement makers may give sodium tripolyphosphate a nod, boost market potential 20%.

Phosphate producers claim new application cuts cement costs, speeds production, eliminates bottlenecks.

Sometimes an emergency detour in a road may lead to a market. Last week, members of the Portland Cement Assn. heard the story of how one of their colleagues charted a new path, licked a production bottleneck and opened an untapped outlet for a chemical.

About two years ago, Missouri Portland Cement Co.'s new wet process plant at St. Louis ran into a production snag. The slurry formed from its shale (one of two basic raw materials) was not performing according to plan.



WHAT IT DOES: With STP (left), slurry runs; without (right), it's mud.

For one thing, the shale particles wouldn't settle out as fast as desired. And in addition to being a slow settler, the shale slurry was inclined to be unpumpably thick; in order to adjust it to manageable viscosity, MPC's engineers were forced to add extra quantities of water.

This expedient solved the pumping problem but raised two other difficulties. It:

- Created an output bottleneck at the next step, thickening.
- Increased water-removal fuel consumption.

Chemical Easer: Already aware that a deflocculating agent might break up the thick slurry, MPC cast about for a suitable one, hit upon sodium tripolyphosphate. It responded even better than anticipated.

STP was no willy-nilly choice, of course. Although deflocculating agents have won little favor in the United States, they have been widely used abroad. In this country, the Portland Cement Assn. had for some time been screening a large number of dispersants. Most were ruled out because of cost; the relatively low-profit cement makers needed something cheap. STP looked like a logical choice.

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Table I

Case History Summary—STP in Shale Slurry

Rate of addition of STP	110 lbs. (.1%) per 55 tons of dry clay
Reduction in moisture content of clay slurry	between 10% and 15% (22 to 27% based on moisture content alone)
Reduction in moisture content of kiln feed	3% (8.8% on moisture basis only)
Rate of output before STP addition	2,140 bbls./day
Rate of output after STP addition	2,300 bbls./day
Decrease in fuel consumption per barrel	4.1%
Increase in rate of output	7%
Savings in fuel consumption (after subtracting costs of STP)	1½¢ per barrel of cement

tons of STP later, MPC's John Romig and Bruce Kester testified how the additive is benefiting them. In a nutshell: 0.15% STP in their shale slurry permits a cut in slurry-water content from 55% (without STP) to 40%, eliminates a capacity bottleneck, sidesteps plugged-line and pump failure stoppages.

Chemical Plug: Sensing a considerable market potential, at least two makers, Victor Chemical Works and Monsanto Chemical Co., have been at work to make STP the cement dispersant "of choice."

To point up the argument, Victor details a case history (*Table I*).

Both Monsanto and Victor foresee a roseate future in cement for the workhorse "builder" of the detergent industry (*CW, Feb. 7*). Some other phosphate producers, however, have been taking a grayer view of the cement application. Their contentions:

- The size of the market is not strictly predictable. No two slurries behave alike and would require differing amounts of STP (if any).
- Based solely on rate of consumption, the game seems hardly worth the candle; a mere "pinch" (MPC uses 0.169 lbs./bbl. of finished cement) of STP does the job. With STP selling at less than 8¢/lb., it takes a lot of "pinches" to make a profitable market.

This seemingly long and uncertain row to hoe fails to discourage some observers, Monsanto's Allen Settle, for example. As he views them, the figures (Table II) indicate a "sizeable market."

So far, most of the STP used in cement has been added to the shale slurry, which comprises approximately 17% of the total "wet process" raw material. However, as Settle points out, preliminary results indicate that STP would be useful for processing the other 83% of the material.

Assuming the cement makers take to the idea of (a) adding STP to all their material and, (b) using the same size "pinch" as in the shale slurry, a total market of 75,000 tons/year could result.

Last year's STP production ran roughly 370,000 tons. The sum of the cement makers' "pinches" would seem to be a respectable-size addition.

Dismal Picture

This week, with the fats and oils market in the doldrums, CW scouted the direction in which trade winds will blow in the next several months.

In general, the fats and oils outlook is pretty much one of unrelieved gloom. For one thing, the surplus of stocks, already a worry of national magnitude, will really pile up this fall.

Over-all, total supply of fats and oils may decline a bit; but demand, now on the soft side, is expected to fall off at an even sharper rate. Result: bigger surplus and softer prices.

Cotton Tangle: The cottonseed oil situation had a retarding influence on

Table II

Estimated Potential Consumption of STP in Cement

Est. 1953 "wet process" cement production	150 million bbls.
STP used (by MPC Co.) in shale slurry	0.169 lb./bbl. cement
Potential consumption if used in all shale slurries	12,700 short tons/year
Total potential if added to all "wet process" raw material (see text)	75,000 short tons/year

(Advertisement)

CHEMICALS OUTLOOK

June 1953

This news bulletin about Wyandotte Chemicals products and their applications is published to help keep you posted. Perhaps you will want to route these and subsequent facts to other interested members of your organization. Additional product information, through Wyandotte research and technical service facilities, and trial quantities of Wyandotte products are always available upon request. May we serve you?

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demand for other oils. Trouble is twofold: (1) uncertainty of continued government support of the cottonseed crop, (2) less than wholehearted response from the cotton farmers to cut back 1953 plantings. Last week USDA economists could foresee only a possible 7% reduction in cottonseed oil. Behind the situation: farms apparently feel sure of their price support, have not cut back except in rare cases.

Other oils are in a similar state. Possibly depressed by the cottonseed oil muddle, interest in linseed oil is flagging; although deliveries on prior contracts are reported as steady, little new business is generating. This isn't surprising: supplies are large, domestic use is below that of a year ago and output will likely be somewhat higher than for 1952.

Likewise soybean oil demand does not seem to be picking up. With present stocks more than ample, and a bigger than last year soybean crop coming up, surplus and soft prices look inevitable.

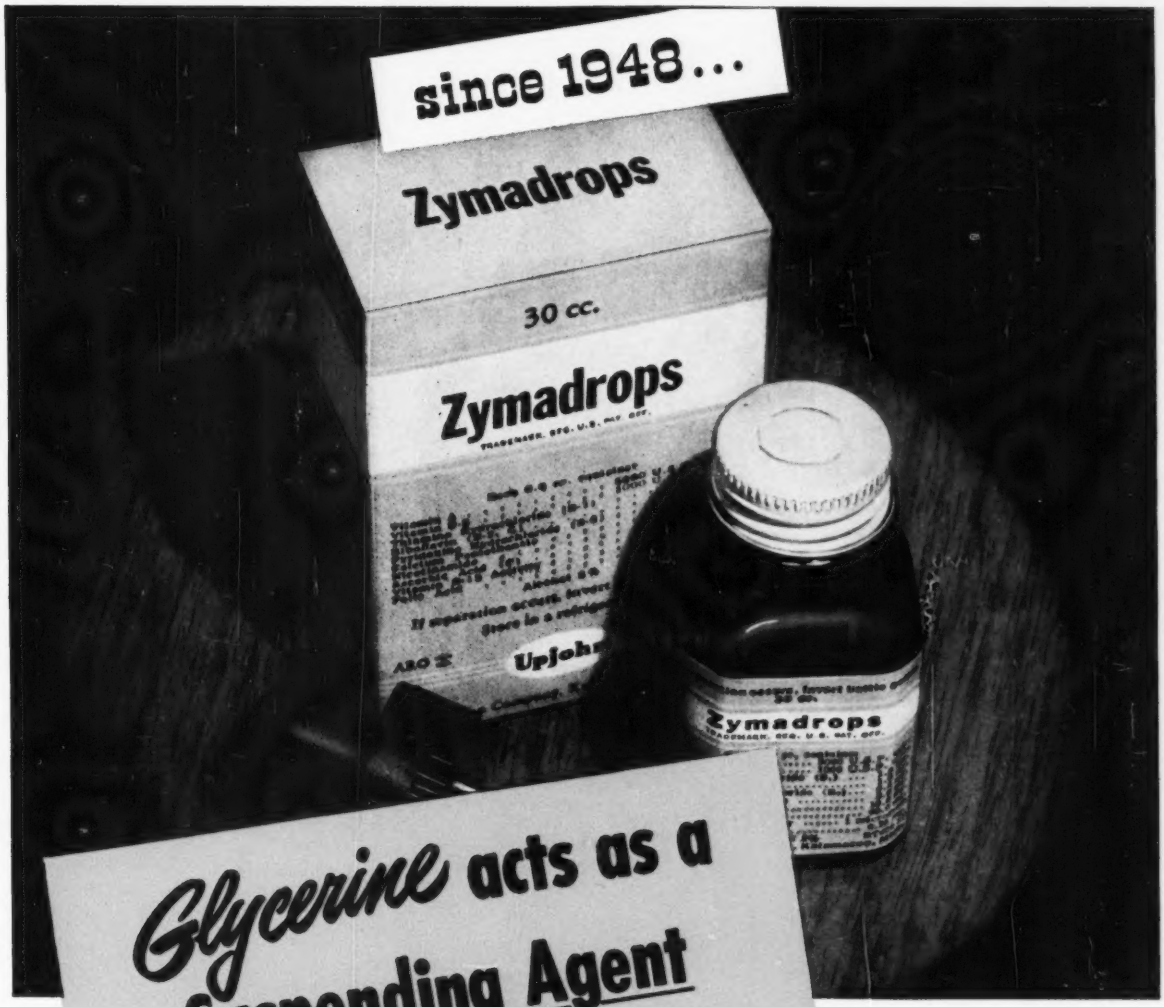
Inedible tallow and greases production, according to USDA prediction, is slated to remain at about the 1952 level. In view of today's huge stocks, this prospect brings small cheer.

Soap Skid: The surplus condition of fats and oils continues to be aggravated by the unrelieved decline in soap sales. Last year, synthetic detergents made further inroads on the soap market. While the synthetics were ringing up a 22% increase over the previous year, soap sales slid 9%. Latest reports for 1953 show the trend as continuing.

As a reflection on the drop in soap, less fats and oils are being consumed. In 1952, saponifiable materials consumption (including fats, oils, rosin, tall oil) totalled a paltry 1,487 million lbs., 10% below 1951, and the lowest since 1924.

Export demands are not expected to support the faltering fats and oils market, either. If anything, export shipments are liable to decline. Big factors: continued currency and credit hurdles, unfavorable price levels for overseas importers, e.g., low olive oil price versus high soybean oil tag.

One Light: On the retail level, the picture is still bright. In toto, we're consuming more fats and oils than last year, says USDA. Some decline may be expected in edible fat consumption from the unusually high 1952 usage, but this drop will likely be overbalanced by greater nonfood consumption. However, opines USDA, it'll take more than higher retail demand to avert a glut.



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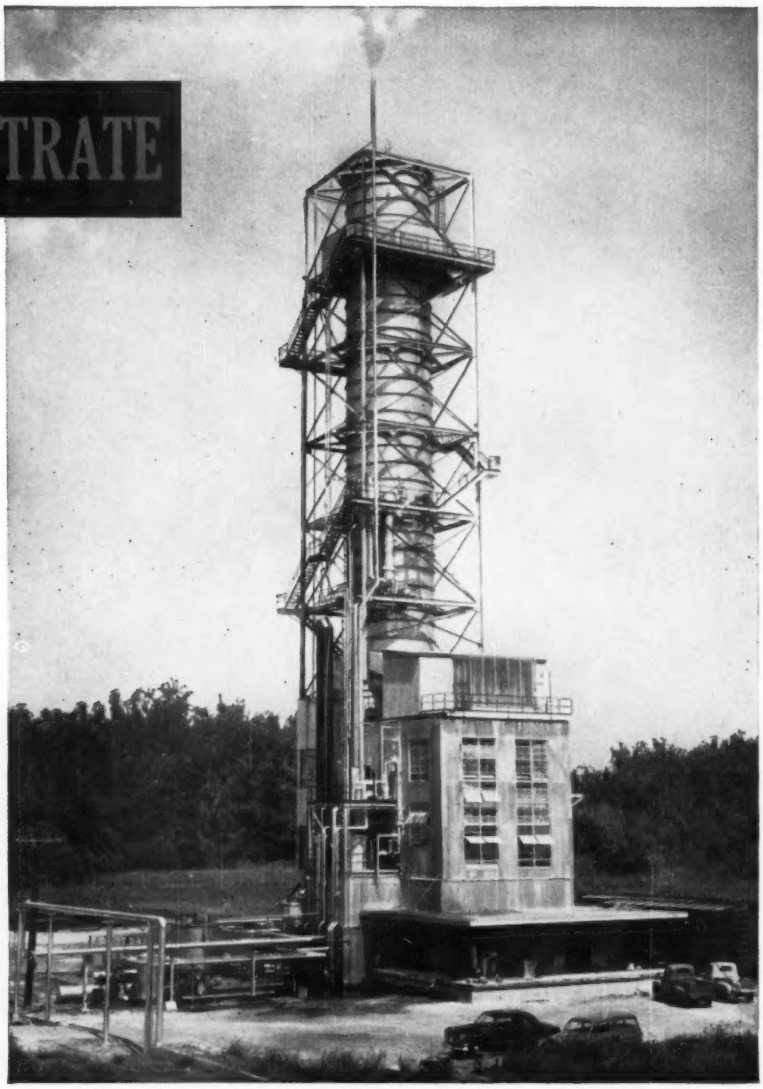
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Aerosol Testing Ground

Standout in a standout field, the 32 million cans of aerosol insecticides topped the list of pressurized products last year, according to the survey presented at the Chemical Specialties Manufacturer's Assn. meeting last month. And behind the push-button spray industry, testing, formulating, researching, is the U.S. Agriculture Dept.'s Research Center at Beltsville, Md.

Head man when it comes to the self-contained sprays at the center is Robert A. (Buzz) Fulton. He has followed up the pioneering work of Goodhue and Sullivan (who worked out the principle of aerosols 13 years ago) and added invaluable work of his own. Nearly everyone in the aerosol insecticide business consults Fulton. This week he guides CHEMICAL WEEK's camera through the station.

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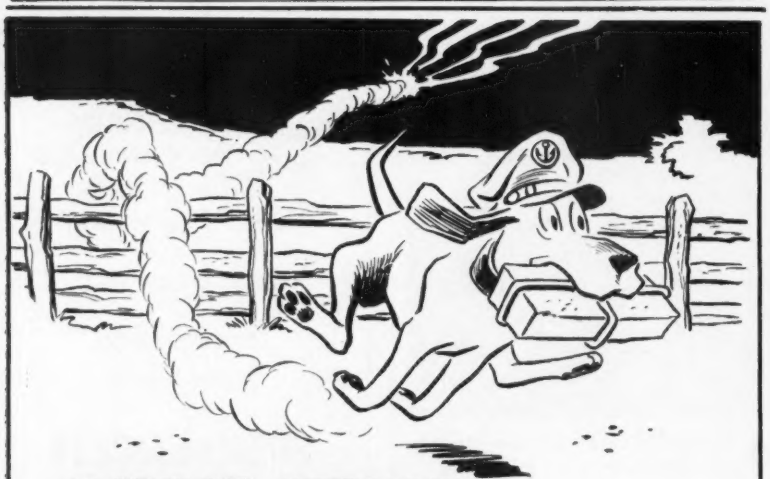
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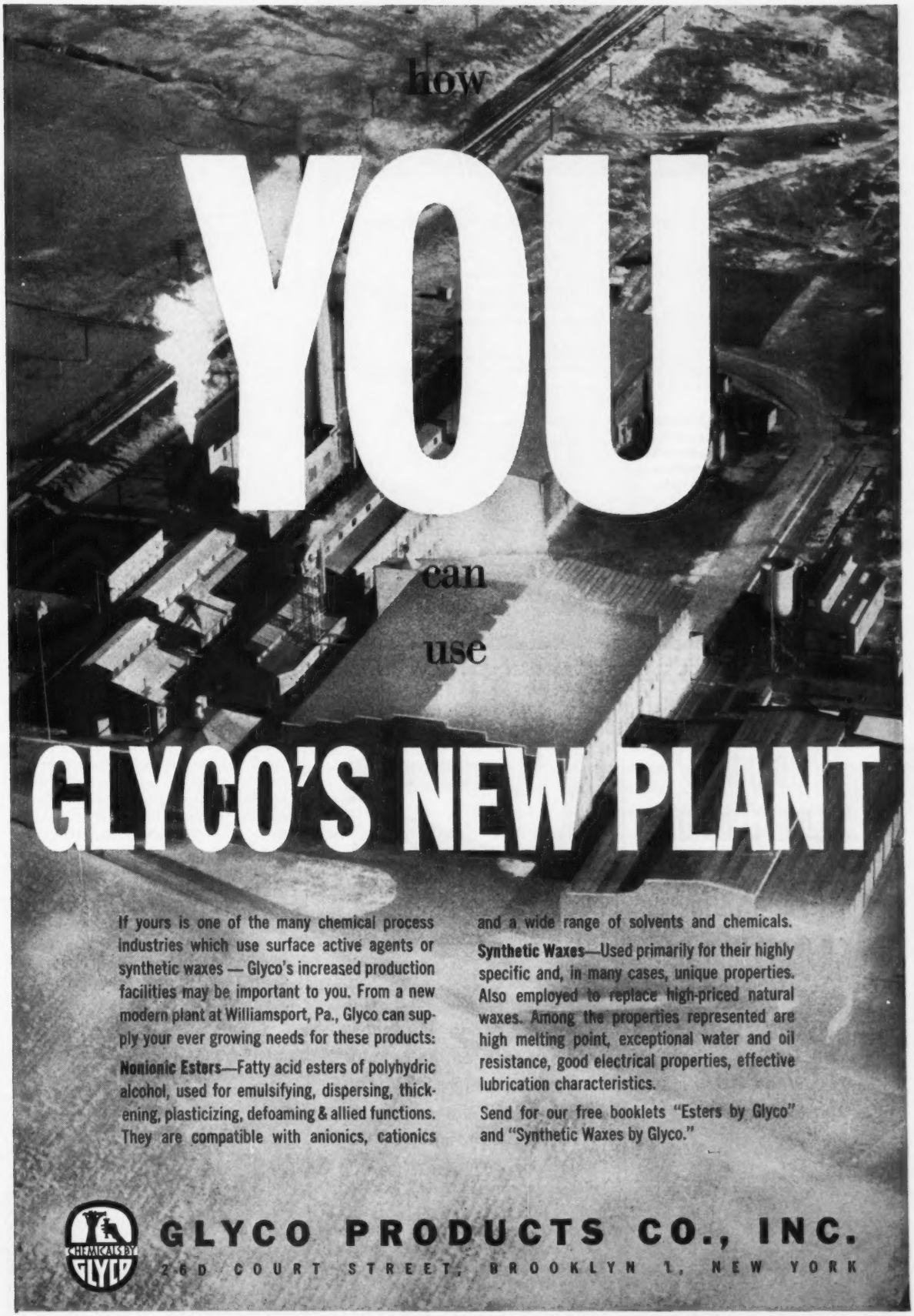


6 **SAFE attire for use with toxic insecticides in greenhouses.**

the pressure of the original bombs, has come a terrific reduction in costs: container and valve dropped from 80¢ to about 10¢. In addition, by adopting the common type can-sealing and filling machinery, a loader can now fill 40,000 units/day on one line.

Room for More: There are already about 40 producers of aerosols in this country turning out nearly 100 million pressurized units annually, but Fulton feels there's plenty of room for more. Just this week the USDA is publishing a bibliography compiled by Fulton and Ralph P. Gelardo on the pressurized units (Bureau of Entomology and Plant Quarantine Pub. No. E-837), helpful to anyone interested in aerosol manufacture.

The Beltsville center offers more



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than that to prospective aerosolers. It likes to receive visitors tempted to make the units, and since the government holds the basic patents on aerosol insecticides—plus others on cans, formulas and valve parts—a businessman can hardly go wrong by checking in at the station.

Should the planned product be an insecticide, Fulton is sure to begin any "tour" with a discussion and explanation of the Federal Insecticide and Rodenticide Act. From there, Fulton shows the facilities at the center, gets down to specifics on valves and formulations.

Even after a manufacturer has worked out his initial products, he can still get help from the USDA. Fulton and co-workers run tests on components, point out deficiencies—they examine every new type of insecticide to be used in aerosols.

Before a spray-dispensed bug-killer gets USDA approval, though, the manufacturer must present a report from a qualified lab attesting to its absence of health hazard in ordinary use. The Food & Drug Administration and the U. S. Public Health Service are consulted, too.

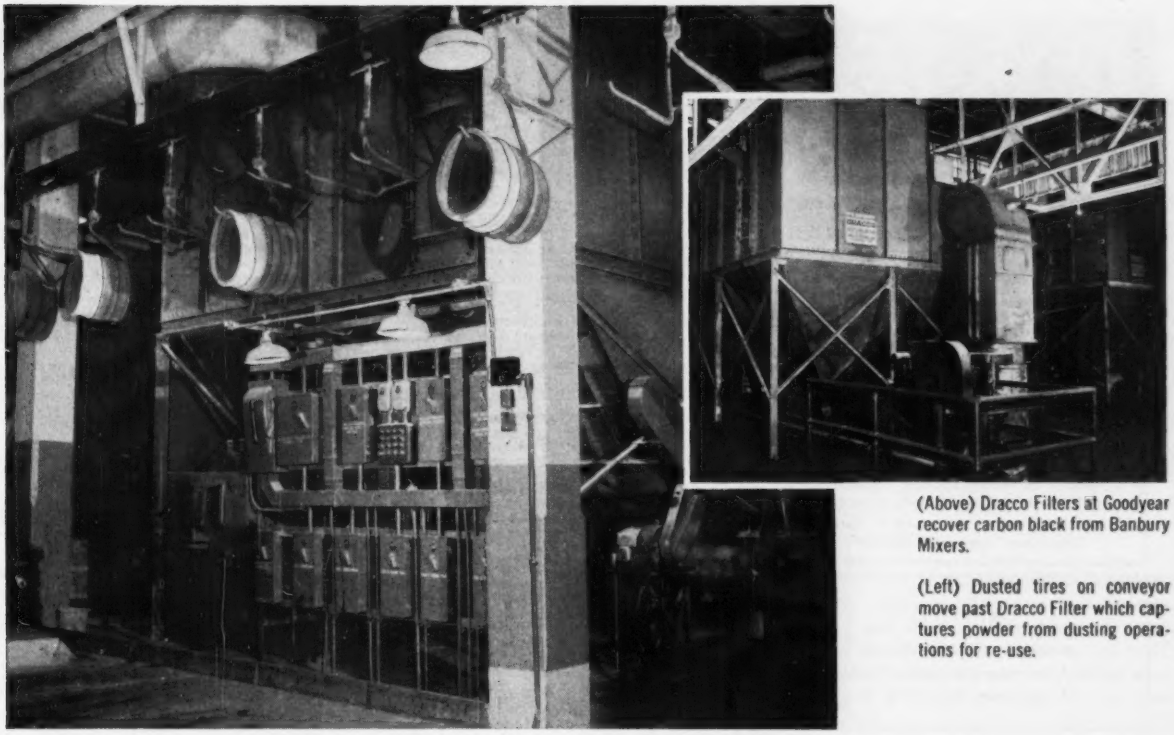
Still a top problem for aerosol makers is getting the buyer to handle the unit properly—getting him to read the directions on the label so that he will not "overdose" a room.

Search for Safety: That's one of the reasons why much of Fulton's recent work has been directed toward lowering the hazard in using aerosols. Many of the high-pressure units, for commercial growing, make use of exceedingly toxic pesticides like parathion and TEPP.

At first, farmers donned war-surplus gas masks when they used the organic poisons—but the masks were little more than worthless. To remedy this, the government set up an Interdepartmental Committee—Fulton had the job of working out filters that would remove all but one part per million of the insecticides.

A spectrophotometer was used to detect the exceedingly minute amounts of poison. After considerable experiment, specifications for special intricate filters were developed. Their manufacture was taken over by several gas mask producers; now more than five respirators are available, for example, which meet the safety requirements for parathion.

At that, there is still no single filter cartridge that will effectively screen out both TEPP and HEPT. That's one of Fulton's problems for the future—but it won't be the first tough one he has tackled.



(Above) Dracco Filters at Goodyear recover carbon black from Banbury Mixers.

(Left) Dusted tires on conveyor move past Dracco Filter which captures powder from dusting operations for re-use.

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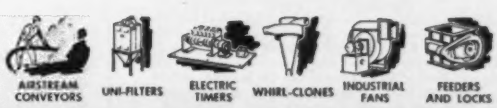
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Wanted: Graduate Engineers, preferably chemical, for both Consulting and Field Sales Work. For Sales, should have 3 or more years successful record. For Consulting, young men preferred so that our business can be taught to them and they can move up in years to come. P-7866, Chemical Week.

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Selling Opportunity Offered

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Aerosol and Pressurized Products Survey 1952

Number of units by the size indicated for each one of the products listed, packed by 31 companies in 1952, including government contracts.

Product	Number of Units Packed		
	Twelve Ounce	Six Ounce and Less	Total
Space insecticides	29,456,906	2,060,568	31,517,474
Residual insecticides — roach and ant sprays, etc.	1,473,178	276,312	1,749,490
Mothproofers	1,940,410	21,931	1,962,341
Room deodorants	6,950,386	5,459,882	12,410,268
Pigmented and metallic paints	4,344,035	143,373	4,487,408
Clear plastic sprays	2,219,556	14,915	2,234,471
Other household products	1,951,897	1,147,971	3,099,868
Shaving lather	3,171,976	13,510,402	16,682,378
Other personal products	2,245,658	6,521,151	8,766,809
Miscellaneous products	9,685,013	3,413,036	13,098,049
TOTAL	63,439,015	32,569,541	96,008,556

Ceiling Unlimited

Zooming sales of aerosol products, as shown in the survey by the Chemical Specialties Mfrs. Assn. (see above) is causing some specialty makers to wonder, Will the sales peak ever be reached?

As has been the case since their introduction, the low-pressure units far outnumber the high-pressure bombs. Only 610,349 of the high-pressure units were packed last year—which brings the total of space insecticides up to 32,127,823, and the over-all aerosol total to 96,618,905.

As predicted last year, push-button shaving lathers have caught on well, and rate a grouping all their own (16,682,378) in this survey. They were included in personal products (shampoos, perfumes, personal deodorants, suntan oil, hair lacquer, etc.) last year; but even without the shave creams, personal products numbering nearly 9 million units were produced.

The newer products showed the most striking gains all around. While space insecticides, paints, room deodorants, and the like approximately doubled in volume, household products (waxes, insect repellents, water repellents, etc.) jumped from 218,787 to 3,099,868; miscellaneous items (Christmas novelties, dog sprays, lubricants, antistatic sprays, etc.) went up from 2,977,502 to 13,098,049 units, comparison with last year's survey (*CW, June 21, '52*) shows.

Some 31 firms, estimated to fill virtually all the aerosol cans in the U.S., participated in the survey. It was pointed out that food products are not included in the totals.

•

Farmed Out: Sales of Eaton Laboratories' nitrofuran veterinary medicines will be handled by Winthrop-Stearns, Inc. The nitrofurans (*CW, May 9*) are now available in three forms for clinical use—Furacin (suggested for topical infections and bovine mastitis); Furaspor (for infections such as ringworm); and Furadantin (now used by the medical profession for bacterial urinary tract infection and soon to be sold for veterinary use).

•

Pesticide Primer: A new 209-page handbook covering most new pesticides, herbicides, and other agricultural chemicals has just been issued by Lester W. Hanna, (Forest Grove, Ore.). Chemical names, uses, properties and formulations for the chemicals are included.

•

Elbow Room: Enthone, Inc. (New Haven, Conn.) has added a two-story unit to its home plant. The additional 6,600 sq. ft. are to be used for warehousing and customer service and research laboratories.

•

Vinyl Booster: Alframine Corp. (Los Angeles) has worked out a new series of stabilizers and antistatics agents for various vinyl resins. The new additives are tradenamed Duranyls.

•

Bluegrass Special: Construction of a $250,000 plant for Bluegrass Plant Foods, Inc. (Cynthiana, Ky.) will begin shortly on a seven-acre site near West Danville, Ky. The plant will produce fertilizers.

•

Better Dusts: The U.S. Dept. of Agriculture has worked out some new insecticide formulations making use of calcium carbonate (a form of ground limestone) as the diluent. The chemically treated carbonate stored and worked well even under moist conditions, and despite the alkalinity of the dust, formulations of parathion, DDT,

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Atlanta 3 .....Robert H. Sidur, 1321 Rhodes-Haverty Bldg., Walnut 5778-2383

Chicago 11 .....Alfred D. Becker, Jr., Steven J. Shaw, 520 N. Michigan Ave., Mohawk 4-5800

Cleveland 15 .....Vaughan K. Dissette, 1510 Hanna Bldg., Superior 7000

Dallas 1 .....James Cash, First National Bank Bldg., Prospect 7-5064

Los Angeles 17 .....Jos. H. Allen, 1111 Wilshire Blvd., Madison 6-4323

New York 36 .....Knox Armstrong, Robert S. Muller, L. Charles Todaro, 330 West 42 St., LOngacre 4-3000

Philadelphia 3 ...William B. Hannum, Jr., Charles F. Onasch, Architects Bldg., 17th & Sansom Sts., RIttenhouse 6-0670

San Francisco 4 .....Ralph E. Dorland, 68 Post St., Douglas 2-4600

Boston 16 .....350 Park Square Building, Hubbard 2-7160

Detroit 26 .....856 Penobscot Bldg., Woodward 2-1793

Pittsburgh 22 .....738 Oliver Bldg., Atlantic 1-4707

St. Louis 8 .....3615 Olive St., Continental Bldg., Lucas 4867

SPECIALTIES . . . . .

EPN and toxaphene appeared effective over a considerable period of time.

Research was done by the USDA's agricultural experiment stations in Texas and Mississippi, in cooperation with the Bureau of Entomology and Plant Quarantine.

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Canned Ink: Reynolds Industries, Inc. (Cleveland) has recently introduced colored, aerosol-packed stencil inks. The new waterproof ink is tabbed Reynolds Quick Spraying Stencil Ink.

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Coast to Coast: Foster D. Snell, Inc. (New York) and Truesdail Laboratories Inc. (Los Angeles) have joined forces to test floor waxes for manufacturers. All testing will be under supervision of F. D. Snell, Inc.

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For Art's Sake: Art Cement Manufacturing Co. (Miami) will build a new $67,000 paint plant in Miami. New facilities will have about 16,000 sq. ft. of floor space.

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Bite Count: The Toledo, O., Sanitation Dept. is trying something new this year. For some time it has sent two-man teams into the wooded areas around that city to take a mosquito census. One member of the team would roll up his sleeves and trousers, and let mosquitoes fatten on his blood. While the insects were occupied with the transfusion, the second member of the team would cover them with a chloroform-filled tube, and chalk up the count.

But this year, science lends a hand—the city will use funnel-shaped traps baited with dry ice. Researchers have learned that the insects are as much attracted by carbon dioxide as by human flesh, and the count will be made with the traps. If the plan doesn't work, though, it's back to the two-man teams.

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Florida Pesticide Vote: Through the House, and coming up for vote in the State Senate is a new bill in Florida, designed to place sale and manufacture of insecticides and other pesticides under regulation of the state agricultural commissioner. Chances are that it will pass the Senate with no difficulty.

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Table Topper: Furane Plastics, Inc. (Los Angeles) is marketing a new furane plastic, Jet-Kote, for coating wood and Masonite table tops and equipment. The resin, claimed to set at room temperatures, is said to have high chemical and heat resistance, can be used alone or with glass-cloth to finish the surface.

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